General Surgery

Version 5.3

PLAB 1 Keys is for PLAB-1 and UKMLA-AKT (Based on the New MLA Content-Map)

Corrected, Updated, Lighter

With the Most Recent Recalls and the UK Guidelines

PLAB 1 Keys is For PLAB and UKMLA-AKT (Based on the New MLA Content-Map)

ATTENTION: This file will be updated online on our website frequently!

(example: Version 2.7 is more recent than Version 2.6, and so on)

Key 1	**Paget's Disease of the breast and nipple**

◙ A rare breast malignancy.

◙ With a better prognosis than the infiltrating ductal carcinoma.

◙ **Features**:

♠ **Dry skin** around the areola resembling **eczema** with **scales + erosions.**

♠ **Itching** in the area.

♠ **Discharge** per nipple sometimes **bloody.**

♠ **Ulcerated** and/or **inverted nipple**.

◙ Diagnosis → **Punch Biopsy**

Differential Diagnoses of Breast Lesions

1 ◙ Painful, fluctuating mass over the breast or near the nipple

→ **Nipple Abscess** (Pus Collection).

2 ◙ Brown/ Green/ Coloured discharge per Nipple → **Duct Ectasia**.

3 ◙ Hx of Trauma to the Breast (redness or bruises around the lump) + firm, round, solitary and localized lump.

→ **Fat Necrosis.**

4 ◙ Bleeding per nipple in 20-40 YO ♀ ± skin changes

→ **Ductal Papilloma** → Galactogram.

5 ◙ Bleeding discharge per nipple in an Old woman with eczema-like changes in the nipple ± areola ± Ulcers

→ **Paget's disease** (Malignant) → Punch Biopsy

6 ◙ Firm, non-tender, mobile mass in a breast of a young ♀ (15-30 YO)

→ **Fibroadenoma** → Clinical + Ultrasound + FNA

7 ◙ Breast pain (Mastalgia), ↑ breast size, lumpiness (nodularity) of the breast, ♀ in the reproductive age ± tend to appear just before or during menstrual cycle and disappear after it → **Fibroadenosis**.

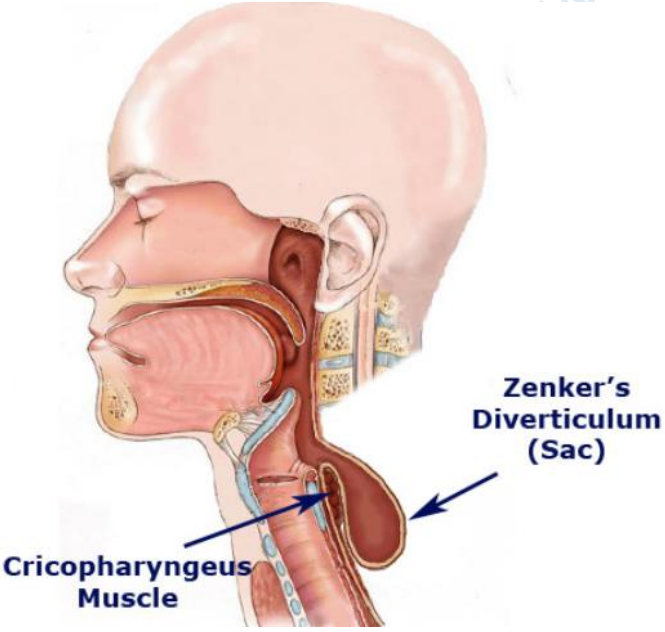
8 ◙ Fixed, irregular, hard, painless lump ± nipple retraction ± fixed to skin (Peau d'orange) or muscle (+) Local fixed, firm axillary LNs.

→ **Breast Cancer** → Core biopsy

9 ◙ Offensive yellow discharge from an area near the nipple + Hx of Abscess near this area → **Ductal Fistula (Mamillary Fistula)**.

10 ◙ Prolonged Redness around the areola. Hx of using antibiotics which improved symptoms slightly. Greenish discharge per nipple. ± nipple retraction ± small lump around the nipple is felt.

→ **Periductal mastitis**. (Commonly young age, smoking is a risk factor, treated with antibiotics, if left untreated it may develop into an abscess that needs drainage by fine needle).

	11 ◙ Persistent nipple discharge that is non-bloody and occasionally milky or serous fluid. It is spontaneous. No breast masses. No Nipple retraction. No skin changes. → **Mamillary duct fistula** (abnormal connection between lactiferous ducts of the breast and skin surface → leads to spontaneous nipple discharge that is not purulent nor bloody. It can appear as a milky or serous fluid).
Key 2	Dysphagia + Regurgitation of Stale food/fluid + Chronic Cough (esp. Nocturnal) ± Bad mouth breath (Halitosis) ± Aspiration ± Gurgling sounds in the chest on drinking ± Neck lump → **Pharyngeal pouch** (**Zenker's Diverticulum**)  **Note: Stale food** = Decayed, rotten and old food (this is because it has been stored in the pouch until it has become rotten "with bad smell").

Endoscopy is Contraindicated as it may perforate the pouch.

Instead, perform → **Barium Swallow**.

Old age + Gradually Worsening Dysphagia (initially for solid food and then for soft and liquids) + Longstanding Gastric Reflux

→ Think of **Oesophageal Carcinoma**.

√ A gift hint that on Barium Swallow → irregular narrowing + Proximal Shouldering.

√ Another hint → Weight loss.

√ Another hint → Hx of GORD or Barret's Oesophagus (Risk Factors)

♦ The commonest type → Adenocarcinoma.

♦ Diagnosis is made by → Upper GI Endoscopy + Biopsy.

(Adenocarcinoma of the oesophagus is Common in GERD and Barret's oesoph.).

Key 3	**Common Tumour Markers**

Breast Cancer	**CA 15-3**
Ovarian Cancer	**CA 125**
Pancreatic Cancer	**CA 19-9**
Colorectal Cancer	**CEA "Carcinoembryonic Antigen"**
Prostatic Cancer	**PSA "Prostate Specific Antigen"**
Liver (HCC)	**AFP "Alpha-fetoprotein"**
Teratoma (e.g. of testicles, ovaries)	**AFP "Alpha-fetoprotein"**
Testicular Seminoma	**LDH (Lactate Dehydrogenase)**

NOTE →

Tumour markers are of the original tumor, not the site of metastasis.

For example, if a **colon cancer** sends metastasis to **liver**, we follow up the original site tumour marker (**Colon**) which is **CEA**, not AFP.

Key 4

Gastric Carcinoma

◙ The gift hint is → **Left supraclavicular mass** (**Virchow Node**).

◙ Others → **Weight loss**, **Old age**, **Tiredness**, **Vomiting, Dyspepsia, Anemia (Palpitations).**

◙ If there are associated **Hepatomegaly** and **Ascites**

→ Late stage Gastric Carcinoma that has **metastasized to the liver**.

◙ **Risk Factors** → Old age, Blood Group A, H. Pylori, Smoking, Spicy food, Pernicious Anemia.

Key 5

Hemoglobin Level Before Surgery

◙ Elective Surgery:

♠ **If Hb is < 10** → Delay "defer" "Postpone" the surgery and Investigate for the anemia reasons first.

♠ **If Hb is < 8** → Transfuse Blood and also Defer the surgery.

◙ Emergency Surgery:

♠ **If Hb is < 10** → Proceed with the surgery.

♠ **If Hb is < 8** → Transfuse Blood and Proceed with the surgery.

Key 6

Hypercalcemia

√ (↑ Ca^{++}) presents with many features such as:

↑ Thirst, ↑ Urination, Depression and **Confusion**.

◙ Pay attention to the history as there might be a Hx of **Multiple Myeloma** or a Hx of **breast**/ **Prostate**/ **Lung cancer (SCC)**.

These malignancies can metastasize to the bone, causing → **Hypercalcemia**.

◙ Hypercalcemia Manifestations:

	• Neuro → lethargy, Confusion, Depression. • GIT → Constipation. • Renal → polyuria (increased urination), Polydipsia (Thirst). • CVS → ECG: Short QT interval. ◙ **Causes of hypercalcemia:** • 1ry hyperparathyroidism. • Multiple Myeloma, Sarcoidosis, SCC of lung, Breast and prostate cancer. ◙ **Management of Hypercalcemia:** • Initially → **IV fluid (NS)** • Then → **Bisphosphonates (e.g. alendronate)**, (or Calcitonin)
Key 7	Sudden onset of severe **LEFT** lower abdominal pain + develops to generalized abdominal pain, guarding and rigidity + **FEVER** + Tachycardia. → **Perforated Diverticulum**. ◙ Diverticulosis (Colon Outpouches) mainly occur on the Sigmoid colon (Left Lower Abdomen).

	◙ One of the complications of Diverticulosis is Diverticulitis which may lead to a ruptured diverticulum. ◙ The fact that there is **Fever** along with the **Acute abdomen** support the diagnosis of a ruptured diverticulum. Fever and sepsis are caused by the leakage of the colon content into the peritoneum → **Peritonitis**. ◙ For your knowledge, whenever you see an acute abdomen, think, initially, that something inside has been ruptured. **Differential Diagnoses**: ♠ **Sigmoid Volvulus** → Sudden onset colicky lower abdominal pain + Abdominal Distension + Complete Constipation (No flatus or stools pass) + Vomiting. ♠ **Intussusception** → Recurrent Non-specific Abdominal Pain. ♠ **Bowel Ischemia** → The pain is not as severe as in a perforated diverticulum (At least initially) + The localization of the pain is poor + Initially, only mild tenderness → No peritonitis "No fever, no severe guarding, rigidity and tenderness" Until late stages + Hx of AF might be given.
Key 8	**Analgesics Ladder** ◙ **Simple Analgesics** → NSAIDs (Diclofenac), Aspirin, Paracetamol.

	◙ **Weak Opioids** → Codeine, Tramadol. ◙ **Strong Opioids** → Morphine, Fentanyl, Diamorphine, Oxycodone. ◙ **Epidural Nerve Block**. ♠ **Bone pain due to metastasis** → Radiotherapy. ♠ No full response? ⟶ add Bisphosphonate e.g. Zoledronic acid ♠ **Neuropathic pain** → Gabapentin, Amitriptyline, Pregabalin. **NOTE:** **After an Open surgery, give** → **Patient controlled analgesia with Morphine** (it can be weaned off later).
Key 9	An **elderly** with **difficulty in swallowing** + **Chronic Cough** + **Bad Breath** + **Regurgitation of food** + **Weight loss**. The initial Investigation? → **Barium Swallow** **Why not Endoscopy?** → Although he is old and with Hx of weight loss, the likely diagnosis here is **Pharyngeal Pouch** "**Zenker's Diverticulum**" given the specific features of **bad**

	mouth breath (**Halitosis**) and **regurgitation of food** along with chronic cough and dysphagia. √ Endoscopy is contraindicated in Pharyngeal Pouch for the fear of perforation of the pouch. Thus, barium swallow is more appropriate.
Key 10	**Important:** All patients with a **Hx of MI** should **not** undergo "**Elective**" **Surgery** for at least **6 months** after their myocardial infarction attack. **√ imp.**
Key 11	**Obstructive Jaundice =** **Acute choledocholithiasis: It results when stones form in the gallbladder and then pass into the common bile duct (CBD), where they may become lodged and cause obstruction.** • Occurs frequently during **pregnancy**. • Presents with: **√ Right Upper Quadrant Pain (sometimes with epigastric pain) +** **√ Obstructive features ► Jaundice**, **Dark urine** and **Pale stools**, (and **↑ ALP** = serum **AL**kaline **P**hosphatase). • **The most appropriate investigation** → **Ultrasound of the Abdomen** → as it will most likely show the CBD stones" Choledocholithiasis".

	• *Note that there are other causes for Obstructive Jaundice such as cancer head of pancreas "painless jaundice", and periampullary tumour.*
Key 12	After **hemicolectomy**, or Rectal Resection and **anastomosis**, one of the common and feared complications is → **Anastomotic Leak** (Leakage of luminal contents at the site of anastomosis). - It usually occurs **5 to 10 days** after the surgery. - It presents with **severe abdominal pain** and **tenderness** over the site of the anastomosis + **fever** + **reduced bowel sounds**. - RFs → **DM**, **smoking**, **immunocompromised** (e.g. prolonged use of **steroids** such as for RA, Asthma, COPD), **rectal anastomosis**, **peritoneal contamination**). **Important:** Anastomotic leakage can lead to **Peritonitis** or **Intrabdominal abscess** which needs: → **CT scan of Abdomen and Pelvis** "with contrast". • Broad spectrum antibiotics should be initiated. An important risk factor for anastomotic leakage is → **DM**.
Key 13	**Old age** + **Painless bleeding per rectum** + **Altered bowel habits** + **Anemia** ± **Weight Loss**

→ Think of **Colorectal Carcinoma**

→ Perform **Colonoscopy**

Note, the malignancy might appear as a large fungating mass or just as an isolated ulcer.

Do not hesitate to request Colonoscopy in a patient presents with these features or most of them!

Notes for Your Knowledge

◙ Left sided colonic cancer usually presents with Obstructive symptoms such as Constipation, Changes in bowel habits, Dark blood "fresh" per rectum along with anemia and weight loss.

◙ Right sided (e.g. Caecal cancer) → Iron Deficiency Anemia mainly.

♠ The right-side colonic diameter is wider than the left side. Therefore, obstructive symptoms are more common in left side colonic cancer.

♠ The right-side bleeding is usually microscopic and tend to mix with stools during the long journey to the rectum; thus, not seen as a fresh dark blood as in the case of the left side colonic cancer.

Key 14	**◙ Bleeding discharge per Nipple in a Middle-Aged woman (20-40 YO) With or Without Skin Changes.**

♠ Dx → **Ductal Papilloma** (Benign)

♠ Investigation → **Galactogram**

(The masses are usually too small to be palpated clinically or to be seen on a mammogram)

Remember,

◙ Bleeding discharge per nipple in an Old woman with eczema-like changes in the nipple ± areola ± Ulcers

♠ Dx → **Paget's disease** (malignant)

♠ Investigation → **Punch Biopsy**.

Common Breast Lesions

1 ◙ Painful, fluctuating mass over the breast or near the nipple

→ **Nipple Abscess** (Pus Collection).

2 ◙ Brown/ Green/ Coloured discharge per Nipple → **Duct Ectasia**.

3 ◙ Hx of Trauma to the Breast (redness or bruises around the lump) + firm, round, solitary and localized lump

→ **Fat Necrosis.**

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5 ◙ Bleeding discharge per nipple in an Old woman with eczema-like changes in the nipple ± areola ± Ulcers

→ **Paget's disease** (Malignant) → Punch Biopsy

6 ◙ Firm, non-tender, mobile mass in a breast of a young ♀ (15-30 YO)

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8 ◙ Fixed, irregular, hard, painless lump ± nipple retraction ± fixed to skin (Peau d'orange) or muscle (+) Local, fixed, firm, axillary LNs.

→ **Breast Cancer** → Core biopsy

9 ◙ Offensive yellow discharge from an area near the nipple + Hx of Abscess near this area → **Ductal Fistula** (**Mamillary Fistula**).

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	→ **Periductal mastitis**. 11 ◙ Persistent nipple discharge that is non-bloody and occasionally milky or serous fluid. It is spontaneous. No breast masses. No Nipple retraction. No skin changes. → **Mamillary duct fistula** (abnormal connection between lactiferous ducts of the breast and skin surface → leads to spontaneous nipple discharge that is not purulent nor bloody. It can appear as a milky or serous fluid).
Key 15	**Following a closure of a stoma (colostomy), or at the site of surgical wound or skin sutures:** → The development of **painful fluctuating swelling** + **fever** → indicates a formation of an **abscess**. → **Local Exploration** is required. Sometimes followed by → **Antibiotics + Drainage**.
Key 16	**U/S Abdomen** can diagnose Gallstones and also biliary colic. In a patient with **recurrent attacks of biliary colics** who presents complaining of right upper quadrant pain → **Repeat the U/S** as he might be in another attack of biliary colic.

◙ **Biliary colic** is when a colic (sudden pain) occurs due to a gallstone temporarily blocking the cystic duct. Typically, the pain is in the right upper part of the abdomen. Pain usually lasts from one to a few hours. Often, it occurs after eating a heavy meal, or during the night. Repeated attacks are common.

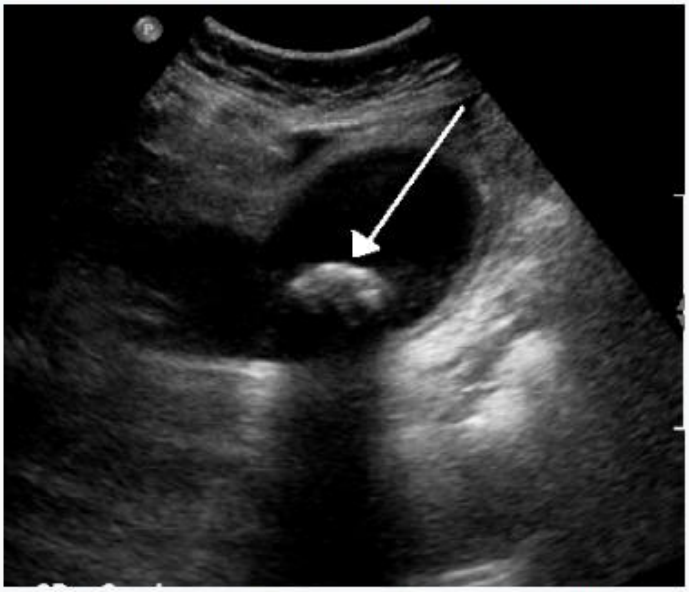
Gallstone formation occurs from the precipitation of crystals that aggregate to form stones. The most common form is cholesterol gallstones.

◙ **Cholecystitis** is associated with **fever + high WBCs ± Peritonitis (Inflammatory elements)** as there might be bacterial infection due to the permanent obstruction of the cystic duct by a stone. On the other hand, Biliary colic does not have this inflammatory component as the obstruction is transient (Temporary).

◙ In both cases → **Abdomen U/S**.

Biliary colic

Other names Gallstone attack, gallbladder attack

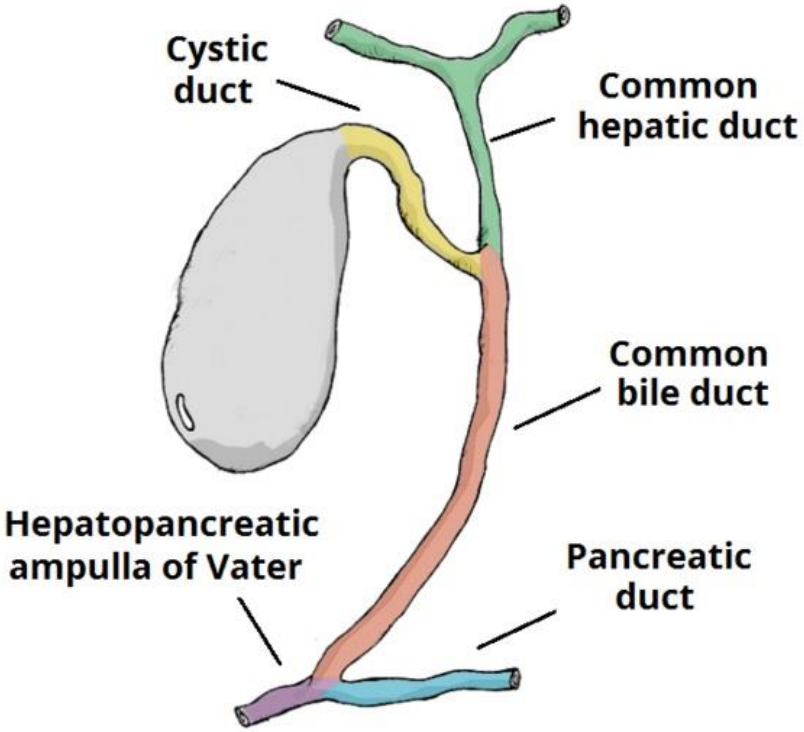


Biliary colic is often related to a stone in the gallbladder

Ultrasound:

A Gallstone impacted in the neck of the gallbladder and leading to cholecystitis.
+ Gallbladder wall thickening.

Important Note: **ERCP** is now rarely done without a therapeutic intent.



Biliary Tree

Key 17

Remember that:

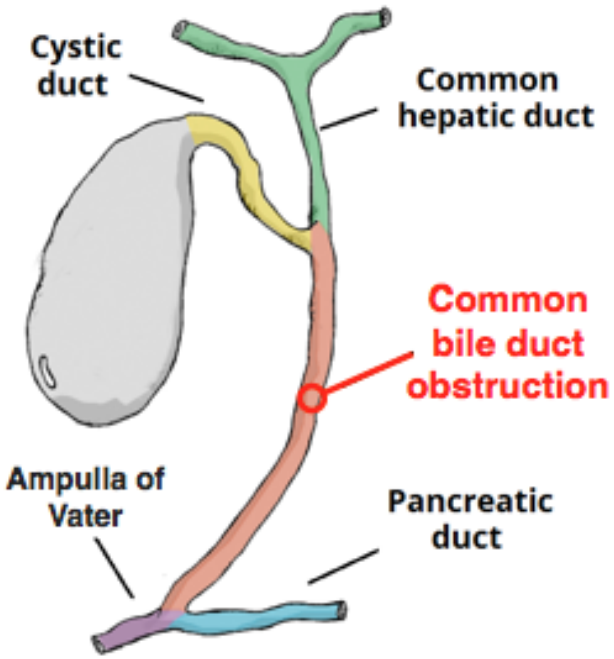
Ascending Cholangitis → **Charcot's Triad** (frj) →

Fever + **R**ight upper abdominal pain + **J**aundice

Acute (Ascending) Cholangitis

A clinical syndrome characterized by **fever**, **jaundice**, and **abdominal pain** that develops as a result of **stasis** and **infection** in the **biliary tract**.

Bacterial infection in a patient with **biliary obstruction**



Charcot's Triad
Fever
Abdominal pain
Jaundice

Reynolds pentad
Fever
Abdominal pain
Jaundice
+
Confusion
Hypotension

Management
- Broad-spectrum antibiotics (e.g. Ampicillin-sulbactam)
- Biliary drainage (e.g. ERCP)

Key 18

Complications of Thyroidectomy

◙ Hypocalcemia:

Damage or removal of parathyroid glands → Hypoparathyroidism → Hypocalcemia.

♠ Hypocalcemia Features → Tingling of lips and fingertips "initial"

SPASMODIC **Neuronal Hyperexcitability**

Spasms, **P**erioral Paraesthesia, **A**nxious, **S**eizures, **M**uscle tones increased in smooth muscles, **O**rientation impaired and confusion, **D**ermatitis, **I**mpetigo Herpetiform (rare and serious), **C**hvostek's sign, **C**arpopedal Spasm, **C**ardiomyopathy (prolonged QT interval on ECG).

- **Trousseau's signs** → after occlusion of brachial artery → ***wrist flexion***
- **Chvostek's sign** → Tapping over parotid (Facial nerve) → ***twitching of facial muscles***.

- **Rx** → give 10 ml of 10% **Calcium Gluconate** (initially).

◙ Acute Airway Obstruction (= Compressing Hematoma, Tracheomalacia):

- Soon after the operation (in the first 24 hours) → Airway Obstruction.
- Rx → Open the surgical incision to evacuate the hematoma.

◙ Nerve Injury:

- Unilateral Injury to the **Recurrent laryngeal** nerve → **Hoarseness** of voice
- Bilateral Injury to the **Recurrent laryngeal** nerve → **Aphonia and Airway obstruction.**
- Injury to the **External** branch of (**superior**) **laryngeal** nerve → **Loss of high-pitched sound** = (**Dysphonia**) = (**Mono-toned voice**).

◙ Thyroid Storm:

Due to manipulation of the thyroid gland during a surgery in a patient with hyperthyroidism.

♠ **Features**:

- Tachycardia, palpitation, High body Temperature, Diarrhea, Vomiting reduced consciousness, Tremors.

♠ **Treatment**:

- ***Beta-blockers*** (***Propranolol***) → To control Tachycardia and Tremors.
- High dose ***steroids*** → it inhibits the conversion of T4 to T3.

◙ Wound Infection (rare: 1-2%).

Key 19

Acute Mesenteric Ischemia VS Ischemic Colitis

◙ Acute Mesenteric Ischemia

♠ From its name "Acute" → **Sudden onset** of **SEVERE** abdominal pain and **tenderness** which exceed the physical signs.

♠ Also, **Abdominal distension** + **Absent Bowel Sounds**.

♠ Again, from its name "Acute", there is something that has caused this **abruptly**, likely **AF** has caused emboli to occlude the blood supply of a large segment of the mesentery. Another possibility is that a patient with **myocardial ischemia** has developed **Hypotension** which has caused low blood reaching the mesentery.

♠ VBG → **High Lactate (↑ lactate).**

♠ The resulted **Gangrene** is **Irreversible**.

♠ Rx → **O2**, **IV fluids, Analgesics, Antibiotics** → then, **Urgent Surgery**.

◙ Ischemic colitis.

♠ **Transient** interruption of the blood supply to the colon.

♠ "**Gradual** Onset – Over **Hours**".

♠ Abdominal pain and tenderness that are **moderate to severe** but not as severe as in acute mesenteric ischemia.

♠ The cause is multifactorial e.g. Heart failure, shock, MI.

♠ Pain usually starts at the **left iliac fossa**.

♠ ± **Bloody diarrhea**.

♠ Rx → Conservative or Surgical.

Acute Mesenteric Ischemia	Ischemic Colitis
Sudden onset	Onset is gradual over hours
VERY SEVERE pain and tenderness.	Moderately Severe.
Hx of AF. AF → embolization to superior mesenteric artery → acute mesenteric ischemia.	Multifactorial (transient interruption of blood supply) e.g. HF ▌MI leading to HF
-	Usually starts at left iliac fossa
VBG → High Lactate (↑ lactate).	± Bloody diarrhea.
Rx: Urgent Surgery	Conservative or Surgical

Key 20	A Post-op patient on 100% facemask oxygen develops **Respiratory Alkalosis** (pH > 7.45), (PaCO2 < 4.7) and (PaO2 >14). The next step should be → **Reduce the O2**. This is a case of **hyperoxemia** (Excess of O2 with Low CO2 due to rapid O2 delivery via the oxygen mask).
Key 21	**◙ When should we offer Prophylactic Mastectomy?** 1) Strong Family History of breast cancer. 2) Inherited Mutations in Breast Cancer Susceptibility genes (BRCA1 and/or BRCA2). These genes are **Autosomal Dominant**. √ **imp**. 3) Previous breast cancer in one breast. 4) Biopsy that shows → Lobular Carcinoma in Situ and/or atypical hyperplasia. **Notes on Mammogram in the UK** **√ Mammogram** is offered for **all women** aged **50-70** YO **every 3 years**. **√** If there is a strong **family history** or **BRCA mutations** → Mammogram should be carried out on Women aged **40-70** every year (**Annually**).

	Do not forget: Prophylactic bilateral Mastectomy/ Oophorectomy can be offered if the patient has **Strong FHx** of cancer and **genetic markers** of that cancer.
Key 22	In a **suspicious** breast mass (e.g. **ill defined**, **spiculated**, with **palpable LNs**), Fine Needle Aspiration Cytology (**FNAC**) is not enough alone. To confirm the diagnosis → **Core Biopsy**. **Other Notes on Breast:** ♠ **Paget's disease** or **Skin changes** → **Punch Biopsy**. (Punch takes parts of the skin changes). ♠ **Suspicious Breast lump** → **FNA** followed by **Core biopsy**. (Core takes entire tissues not only cells as in FNAC) ♠ **Ductal Papilloma** (Bleeding per nipple in 20-40 YO ♀) → **Galactogram**. ♠ **Fibroadenoma** (firm, non-tender, mobile beast mass in a young ♀) → Clinical + **Ultrasound** + FNA ♠ ♀ < 35 YO → **Ultrasound**. ♠ ♀ > 35 YO → **Mammogram**. ♠ **The UK screening for Breast Ca:** • **50-70 YO** → Mammogram every **three** years.

	• If **strong Family** Hx, **BRCA** genes → **40-70 YO Annually**.
Key 23	In the first few hours after abdominal surgery (e.g. Appendectomy), if there are hypotension, tachycardia, tachypnea and Abdominal pain → **Intra-abdominal bleed**. It is likely a case "**Reactionary**" **haemorrhage**. Remember that: • **Primary Hemorrhage** → bleeding during the surgery. • **Reactionary Haemorrhage** → bleeding within 24 hours after an operation usually due to slipping of ligatures/ dislodgement of clots/ warming up of the patient leading to a rise in BP into normal. Example: Bleeding while in the recovery room. This needs resuscitation with IV fluids and if heavy, packed RBCs + Surgical re-exploration. • **Secondary Haemorrhage** → 1-2 weeks post-op (Usually related to infection) **Note that, Appendectomy does not have anastomosis! Just removal.**
Key 24	**Notes on the Histopathology of some breast lesions** • **Invasive intraductal carcinoma** of the breast extending to the epithelium → **Breast cancer** (The commonest form of breast Malignancy)

	• In situ carcinoma involving the nipple epidermis → **Paget's disease**. (Rare Malignant) • Encapsulated adipocytes within a fibrotic stroma → **Hamartoma** (Benign). • Proliferation and expansion of the stroma with low cellularity → **Fibroadenoma** (Benign). • Another Histological Description of **Fibroadenoma** that is frequently asked → **A well circumscribed lump with clear margins and separate from the surrounding fatty tissue. There are overgrowths of fibrous and glandular tissue**. • Or: **duct-like epithelium surrounded by fibrous bridging**. • Cystic formations with mild epithelial hyperplasia (Fibrosis, epitheliosis and cystic formations) → **Fibrocystic changes [Fibroadenosis]** (Benign).
Key 25	**Important Notes on Post-operative Oliguria** ◙ It is known that urine catheter is inserted during surgery and it remains in place for 1-2 days post-op.

◙ However, in the UK, because of the fear of UTI and urinary sepsis that might be caused by a long-time placed urinary catheter, it is recommended that the catheter is removed as early as possible (within 24-48 hours post-op) sometimes immediately in small operations.

◙ The patient is then instructed to report any discomfort during voiding, feeling of bladder fullness, inability to void, urinary retention and so on. Sometimes these symptoms can occur as a result of using **epidural analgesia** during the operation (e.g. in Caesarean section).

◙ If any of these symptoms develop, **BLADDER SCAN** is performed to measure the **Post Void Residual Volume (PVRV)** "the amount of urine remaining in the bladder after one urinates".

◙ **If PVRV is > 500 ml** → **Re-insert a urine catheter**.

◙ Thus, in a post-op patient who has received epidural analgesia and now complains of inability to void/ Feeling of fullness → Perform **Bladder Scan** (To measure PVRV and decide on re-inserting the urine catheter accordingly).

HOWEVER

If a healthy patient who still has the **urinary catheter in place** after surgery and it shows that he has passed **small volume of urine** within 24 hours post-op, the **first** "**initial**" step that should be done is → **Check the Urine Catheter**!

♠ the urinary catheter might only be **kinked** (**curled**) or **blocked** (needs a simple flush) or **mispositioned**. So, do not rush and pick "Bladder Scan"!

	♠ If there is nothing wrong with the urinary catheter and the patient is hypotensive and oliguric → **IV fluid challenge** (There might be internal Bleeding or Acute renal injury)!
Key 26	A patient with a **tender mass** near the **anus**. The lump is tender, **swollen**, **erythematous** and with **throbbing pain** that is worse on sitting. There is also **fever** and constipation. The patient is **diabetic**. The likely Dx → **Anorectal Abscess** Management → **Incision + Drainage + Antibiotics** **Anorectal abscesses** tend to develop in patients with **DM**, **Immunocompromised** (e.g. prolonged steroids intake), **Crohn's disease**.
Key 27	**A well circumscribed lump with clear margins and separated from the surrounding fatty tissue. There are overgrowths of fibrous and glandular tissue**. → **Fibroadenoma**.
Key 28	**Axillary Lymph nodes** clearance (removal) during **radical mastectomy** can lead to → **Upper Limb Lymphoedema** (Redness and Swelling) + Frozen shoulder. Rx → Physiotherapy and arm exercise.

Key 29

Perianal Fistula Management

◙ **Superficial** = **Simple** = **Low Fistula** → **Lay Open (Fistulotomy)**.

◙ **Deep** = **Complex** = **High** = **Fistula that crosses internal and external sphincters** → **Seton Suture, Ligation of inter-sphincteric fistula tract**.

Key 30

Fibroadenoma

- Benign.
- The commonest breast tumour in Adolescence and **Young** women.
- **Firm**, **Painless** "**Non-tender**", **Mobile**.
- Some of them are extremely mobile that they can slip between the examining fingers and are thus called "**Breast mice**".
- Dx → **Clinical + U/S + FNAC**

Key 31

How to Deal with Diabetic Patients Before Surgery?

Pre-op Management of **DM 2 (on oral hypoglycemics)**:

- If **Major** surgery → Stop oral hypoglycemic before surgery.

	• If **Minor** surgery → Continue the same routine. Pre-op Management of **DM 1 (on insulin):** • If **Major** surgery → **Start sliding scale IV insulin before surgery** and continue until diet per-mouth is re-established. ♠ Another possible Answer for PLAB 1: → **Start IV Insulin, Dextrose and Saline pre-op**. • If **Minor** surgery: Omit insulin on the day of the surgery. ***In all cases, restart the previous regimen when per mouth diet is re-established + Check Blood glucose 4 hourly.***
Key 32	◙ **No** gastric Bubbles → **Oesophageal Atresia**. ◙ **Single** Bubble → **Gastric/ Pyloric Atresia**. ◙ **Double** Bubbles (Double bubble sign: Oesophagus + Stomach) → **Duodenal Atresia**. ◙ **Triple bubble sign** → **Jejunal Atresia**.
Key 33	A pregnant woman attends for anomaly scan at 31-week gestation. She has polyhydramnios. U/S → No fetal gastric bubbles.

	→ **Oesophageal Atresia**. ♠ **Polyhydramnios** + **Absent fetal Gastric Bubbles** → **Oesophageal Atresia**. ♠ *Logically, if nothing can pass into the stomach because of the oesophageal atresia, there won't be bubbles in the stomach!* ♠ Important post-natal (after delivery) sign of oesophageal atresia: → **inability to pass a catheter into the stomach** (**X-ray would show the catheter is coiled in the oesophagus**). **REMEMBER:** **Coiled NGT after Road Traffic Accident → Diaphragmatic Rupture.**
Key 34	**Tenesmus** → a continual or recurrent inclination to evacuate the bowels, caused by disorder of the rectum or other illness. **Some RFs of Rectal Carcinoma:** ♠ FHx ♠ Smoking ♠ Polyposis Syndromes ♠ Low fibre diet ♠ IBD

Key 35	Firm, painless, mobile mass in a young woman's breast → **Fibroadenoma**. Investigation → **Ultrasound**.
Key 36	**Following surgery, the most common complication in general is** ► **Post-Operative Infection**. It does not matter what the type of the surgery is. Generally, Post-op infection is the most common complication seen, including local (wound) infection, lung infection (Hospital-acquired pneumonia) and so on. **Example,** **After a hemi-arthroplasty:** ♠ **Post-operative infection is the commonest complication**. ♠ **Fat necrosis** is very rare. ♠ **DVT** and **Pulmonary embolism**: can occur but not as common as infection. This is because nowadays, early post-op mobilisation + Heparin/ Enoxaparin are mandatory. ♠ **Avascular necrosis** cannot occur as the fractured head of the femur has been already replaced. **Hemi-arthroplasty** = a surgical procedure that involves replacing half of the hip joint. Hemi means "half" and arthroplasty refers to "joint replacement."

	Replacing the entire hip joint is called total hip replacement (THR). A **hemiarthroplasty** is generally used to treat a fractured hip.
Key 37	**A Case Scenario** A 60 YO ♀ presents to the ED complaining of passing large amount of bright red blood + Left lower abdominal pain for 2 days that is worse after eating + Nausea but with no vomiting. The patient's main diet is canned meat. There is localised left lower abdominal tenderness without rigidity or rebound tenderness. On examining the rectum, blood is found on the examiner's glove. Vital signs: (BP: 85/55), (HR: 105), (Temperature: 38°C), (RR: 19). ◙ The likely diagnosis → **Bleeding diverticulitis**. ◙ The most appropriate step → **Urgent admission to the surgical ward**. ◙ The most appropriate "INITIAL" step → **IV fluid (she is hypotensive**). **Diverticulosis** ♠ Diverticulosis → Outpouches (outward herniations) of the colonic wall. ♠ **Low fibre diet** + (**age > 50 Years**) are common precipitating factors. Patients tend to consume lots of canned food that is low in fibres. ♠ Diverticulosis **mainly affects the sigmoid colon** (Left Lower Abdomen). ♠ It is **Mainly Asymptomatic**.

♠ Sometimes, the stools can get impacted inside the diverticulae leading to infection → **Acute Diverticulitis** → **left iliac fossa pain and tenderness, Fever, Constipation.**

♠ In the case of **acute diverticulitis** → **Admit patient and give IV antibiotics**.

♠ So, the asymptomatic disease is called (**Diverticulosis**) or (Diverticular disease). **When infected, it is called**→ **Diverticulitis**.

Important:

What is the most likely outcome of acute diverticulitis?

• The likely outcome of **acute diverticulitis** after treating with IV antibiotics, IV fluids, observation and keeping the patient NPO

→ Complete resolution (recovery).

• Only **20%** of acute diverticulitis cases develop complications such as fistula, abscess, bowel obstruction, perforation and or peritonitis.

• Only **20%** of acute diverticulitis cases develop complications such as fistula, abscess, bowel obstruction, perforation and or peritonitis.

♠ **Bleeding**/ **ruptured** diverticula are also complications (rare).

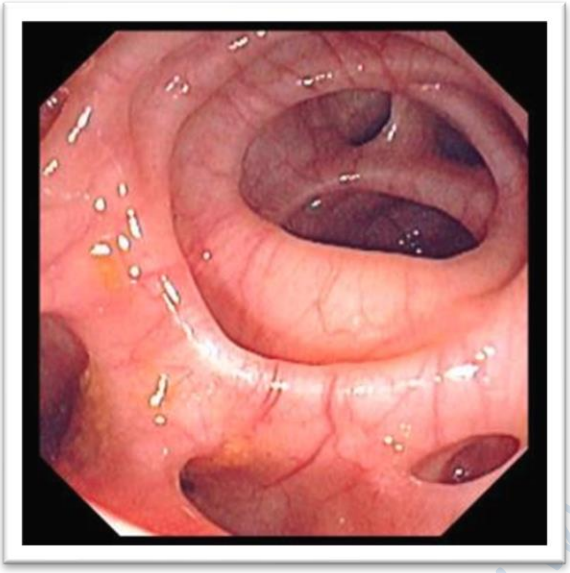
♠ If bleeding occurs:

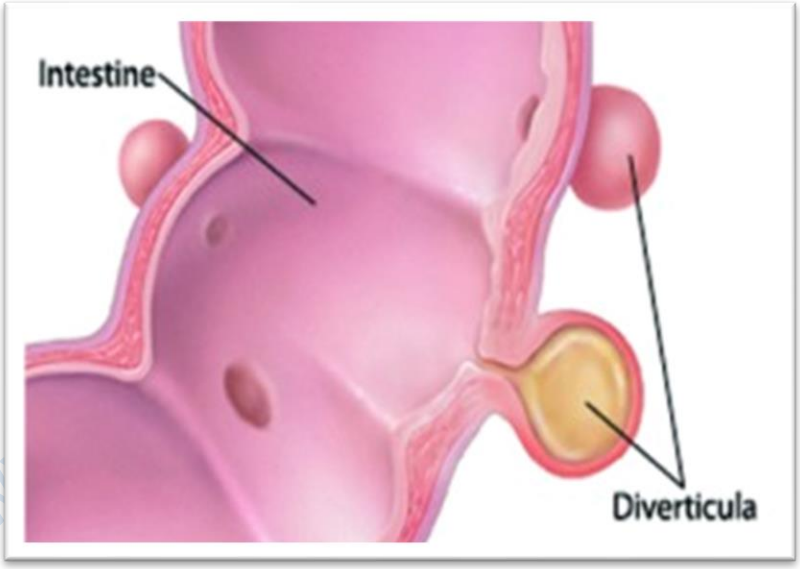
→ Stabilise the patient by IV fluids, IV antibiotics,

→ **Arrange Urgent Admission to the surgical ward,**

→ Take FBC "Haemoglobin" to see if blood transfusion is required, CRP to confirm the presence of infection (diverticulitis),

→ Colonoscopy to correct and stop the bleeding source or even surgery if there is a diverticular rupture.





◙ **Do not forget: in diverticulosis, profuse bleeding per rectum**

→ **urgent admission.**

Key 38

If haemorrhoids (Piles) are **Asymptomatic** (even if advanced grade)

→ **No surgical treatment is required**!

Grades of Hemorrhoids

Grade	Bleeding/Prolapse
I	Bleeding only; no prolapse
II	Prolapse with defecation: spontaneous reduction
III	Prolapse with defecation: must be manually reduced
IV	Prolapsed, incarcerated: cannot be manually reduced

Key 39

After abdominal surgery (e.g. Splenectomy), blood supply of the stomach might be affected during the operation → the stomach will be in ileus (non-functioning) → accumulation of air inside the stomach

→ **Acute Gastric Dilatation**.

Example:

	On the second day post-splenectomy, a patient develops **epigastric fullness**, **tenderness**, **nausea** and **Vomiting**, and gradually increasing **abdominal distension**. He is **hypotensive** (BP: 75/45) and **Tachycardic** (135 bpm). ◙ The likely diagnosis → **Acute Gastric Distension**. ◙ The next step should be → **Insertion of NGT (Nasogastric Tube).** ♠ The NGT will "**deflate the stomach**" and thus the signs and symptoms would rapidly improve. **♠ Why is there hypotension?** When stomach massively dilates, it compresses the surrounding vessels, sometimes the aorta as well → blood pressure drops.
Key 40	◙ **Numbness** and **Tingling** of the **thumb**, **index** and **middle** fingers → Think of *Carpal Tunnel Syndrome* √ **Pregnancy** is an important **RF** for Carpal Tunnel Syndrome (due to fluid retention). √ **Tinel Test** is **not always positive** in Carpal Tunnel Syndrome "very low sensitivity". ◙ The **Transverse Carpal Ligament** compresses the **MEDIAN nerve**.

	◙ Thus, the treatment would be → **Cut the Transverse Carpal Ligament** to release the pressure on the median nerve. ♠ **Note**: **Transverse Carpal Ligament** is also called = **Flexor Retinaculum** = **Anterior Annular Ligament**.
Key 41	**Anal Fissure** ♦ **Extremely painful** especially on defecation (*The patient may refuse rectal examination because of the intense pain*)! ♦ There are **blood streaks** on the stools. ♦ *The patient my remember an event when they felt a **sharp intense** pain while defecating*. ♦ The **constipation** and **straining** are the precipitating factors. However, the presence of an anal fissure would also cause constipation as the patient would be so afraid to pass stool as it is severely painful! **Notes:** ♠ **Haemorrhoids** → Blood + Intermittent, bearable "tolerable" pain or painless/ splashes of blood. ♠ **Perianal Abscess** → Throbbing pain, swelling, Usually No blood. ♠ **Anal fissure** → Intense pain (unbearable), streaks of blood. **e.g.** ◙ A man presents with **severe pain in anus** especially on **defecation,**

blood streaks on the stools and Hx of **constipation.**

The likely Dx → Anal Fissure.

◙ **Management of an acute anal fissure (< 6 weeks):**

√ Dietary advice: high-fibre diet with high fluid intake.

√ Bulk-forming laxatives are first-line – if not tolerated then lactulose should be tried.

√ Lubricants such as petroleum jelly may be tried before defecation.

√ Topical anaesthetics.

√ Analgesia.

◙ **Management of a chronic anal fissure (> 6 weeks):**

√ The above techniques should be continued.

√ Topical glyceryl trinitrate (GTN) is first-line treatment for a chronic anal fissure.

√ If topical GTN is not effective after 8 weeks, then secondary care referral should be considered for surgery (sphincterotomy) or botulinum toxin.

Key 42

Important Notes on Hernias

◙ **Inguinal Hernia** → **ABOVE** and Medial (some sources say lateral) to the pubic tubercle.

◙ **Femoral Hernia** → **BELOW** and lateral to the pubic tubercle.

◙ **Inguinal Hernia** → Impulse on cough, reducible

◙ **Femoral Hernia** → rarely impulse on cough (but it can impulse on cough) + Irreducible as the femoral canal is narrow + tends to occur more in females + easy to strangulate + often irreducible + below inguinal ligament.

◙ **Strangulated** and **Incarcerated** hernias → **Irreducible, very painful, require urgent surgery.**

◙ RFx of **Inguinal Hernia** → **Male** sex, **Lifting heavy objects**, **old age**, **chronic cough**, **previous abdominal surgery**.

◙ **Indirect inguinal hernia** → **Passes through the deep and the superficial inguinal ring** (Passes through the entire length of the inguinal canal) and lies **LATERAL** to the inferior epigastric artery.

◙ **Direct inguinal hernia** → **Passes through the Posterior wall of the inguinal canal** "directly" and lies **MEDIAL** to inferior epigastric artery.

	It does not pass through the deep and then the superficial ring of the inguinal canal as the indirect hernia does.
Key 43	**Paralytic ileus** **= No GIT Motility + Non-functioning Bowel** **= No Peristalsis** ◙ One of the known **post-operative complications**. ◙ Manipulation and handling of the bowel loops during an intra-abdominal operation → bowel stops functioning "No motility". ◙ **Causes other than surgery** → ***Electrolyte imbalance (HYPOKALEMIA, HYPERCALCEMIA),*** ***Anti-cholinergic, Post-trauma, Opiates, Peritonitis, Immobilisation***. ◙ **Important**, even if it is not an abdominal operation (e.g. Hip joint replacement), the **prolonged immobilisation** alone can cause paralytic ileus. ◙ **Features** → **√ Abdominal Distension "bloating", No passage of flatus "gases".** **√ Absent Bowel Sounds.** **√ Nausea, Vomiting.** **√ Percussion → Hyperresonance.**

◙ **What to do Next?**

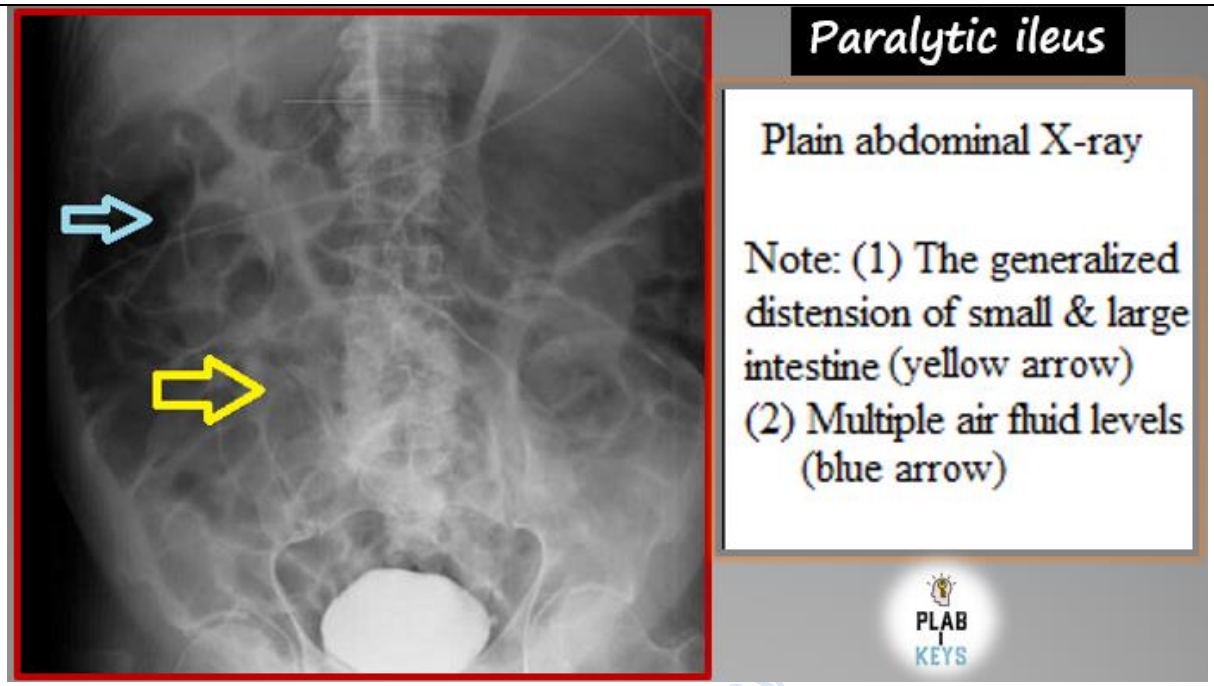
→ **Abdominal X-ray**.

◙ **Erect Abdominal X-ray** → **Gases/ air-fluid levels/ dilated small loops**

Note, in mechanical obstruction → Noisy (high-pitched) bowel sounds + more intense abdominal pain.

◙ **Rx of paralytic ileus** → **NGT + IV fluids**. (**Drip** and **Suck**)

♠ Insertion of Nasogastric tube → deflate the gases and sucks the fluids and thus relieve the distension, nausea and vomiting.



Key 44

65 YO ♀ with firm, round, painless lump in a breast + Bruises + No discharge

→ **Fat Necrosis**

Common Breast Lesions

1 ◙ Painful, fluctuating mass over the breast or near the nipple

→ **Nipple Abscess**.

2 ◙ Brown/ Green discharge per Nipple ± itching and retracted nipple ± Painful breast ± Hx of smoking → **Duct Ectasia**.

3 ◙ Hx of Trauma to the Breast (redness or bruises around the lump) + firm, round, solitary and localized lump → **Fat Necrosis**

4 ◙ Bleeding per nipple in 20-40 YO ♀ ± skin changes → **Ductal Papilloma**

5 ◙ Bleeding discharge per nipple in an Old woman with eczema-like changes in the nipple ± areola ± Ulcers → **Paget's disease** (Malignant)

6 ◙ Firm, non-tender, highly mobile mass in a breast of a young ♀ (15-30 YO) → **Fibroadenoma**

7 ◙ Breast pain (Mastalgia), ↑ breast size, lumpiness (nodularity) of the breast, ♀ in the reproductive age, tend to appear just before or during menstrual cycle and disappear after it → **Fibroadenosis**.

8 ◙ Fixed, irregular, hard, painless lump ± nipple retraction ± fixed to skin (Peau d'orange) or muscle (+) Local, fixed, firm, axillary LNs → **Breast Cancer**

9 ◙ Offensive yellow discharge from an area near the nipple + Hx of Abscess near this area that was surgically treated → **Ductal Fistula** (**Mamillary Fistula**).

10 ◙ Prolonged Redness around the areola. Hx of using antibiotics which improved symptoms slightly. Greenish discharge per nipple. ± nipple retraction ± small lump around the nipple is felt.

→ **Periductal mastitis**. (commonly young age, smoking is a risk factor, treated with antibiotics, if left untreated it may develop into an abscess that needs drainage by fine needle)

11 ◙ Persistent nipple discharge that is non-bloody and occasionally milky or serous fluid. It is spontaneous. No breast masses. No Nipple retraction. No skin changes.

→ **Mamillary duct fistula** (abnormal connection between lactiferous ducts of the breast and skin surface → leads to spontaneous nipple discharge that is not purulent nor bloody. It can appear as a milky or serous fluid).

Key 45

After Thyroidectomy:

◙ Unilateral Injury to the **Recurrent laryngeal** nerve

→ **Hoarseness** of voice.

◙ Bilateral Injury to the **Recurrent laryngeal** nerve

→ **Aphonia ± Airway Obstruction.**

◙ Injury to the **External** branch of (**superior**) **laryngeal** nerve

→ **Loss of high-pitched sound** = (**Dysphonia**) = (**Mono toned voice**).

Key 46	In the exam, any of the following Histopathological descriptions are for **Fibroadenoma**: • Proliferation and expansion of the stroma with low cellularity. **Or:** • A well circumscribed lump with clear margins and separated from the surrounding fatty tissue. There are overgrowths of fibrous and glandular tissue. **Or:** • Duct-like epithelium surrounded by fibrous bridging.
Key 47	◙ The most common breast lesion in young ♀ (15-35 YO) → **Fibroadenoma**. ◙ The most common breast lesion in ♀ in reproductive age (Peak incidence: 35-50) → **Fibroadenosis**. ◙ The most common breast mass in postmenopausal ♀ → **Breast carcinoma**.
Key 48	Itching around the breast + "**Greenish**" foul nipple discharge → **Duct ectasia**.
Key 49	♦ **Intermittent**, **Burning** or **Stabbing** Pain in one part of one breast that may radiate to axilla, **no** palpable **masses** or lumps and no enlarged LNs → **Non-cyclical Mastalgia**

	♦ If there is a lump → Think of **breast Cyst**. ♦ If there is a mention of an association with menstruation → **Cyclic Mastalgia.** --- Breast pain (Mastalgia), ↑ breast size, lumpiness (nodularity) of the breast, ♀ in the reproductive age, tends to appear just before or during menstrual cycle and disappears after it → **Fibroadenosis**.
Key 50	Post-Abdominal operation (e.g. Sigmoidectomy) → Abdominal discomfort is logical, expected and not a big deal as long as there is no fever and no other signs and symptoms. **Even if WBCs and CRP are high**, this is expected post-operatively; therefore, all that is needed is to → **Repeat WBCs and CRP after 24 hours**.
Key 51	◙ It is known that colon and rectum are stores for fecal matters and thus during colectomy, there is a risk of serious infections. ◙ Therefore, **prophylactic antibiotics** should be given before any surgery that involves colon or rectum. ◙ One common regimen:

	→ **Cefuroxime** (**Cephalosporin**) "good coverage against Gram +ve and -ve". **Plus:** → **Metronidazole** "Good coverage against Anaerobic bacteria". ◙ They are given in the **first 30 minutes of the first incision** made or: **√ At the induction of anaesthesia** (Important). ♦ In short, for a patient undergoing **colectomy**, the **prophylactic antibiotics** → **Cefuroxime + Metronidazole**.
Key 52	*Hepatomegaly + Palpable liver + Weight Loss + Hx of Cirrhosis + Tiredness + Right upper quadrant pain* → Suspect **Hepatocellular Carcinoma (HCC)** → Request the hepatic tumor marker → **Alpha-fetoprotein (AFP).** ◙ **Remember that AFP is also a tumor marker for Teratoma.**
Key 53	◙ **Throbbing anal pain** esp. on defecation and on sitting, the pain is gradually increasing in severity, **Tender swelling/mass** around the anus that might be erythematous, ± fever, No blood.

	→ **Perianal Abscess** ◙ **Rx** → **Incision and drainage** (**immediately to prevent the development of fistula**) • **Perianal hematoma** → **Analgesics, Self-resolving**. • **Perianal Abscess** → **Incision and Drainage** (Acute Surgical Emergency) ± **Post-op Antibiotics**.
Key 54	**Very Important Note!** ◙ In Any patient who has just had **Thyroid surgery** (e.g. **thyroidectomy**) and develops **Shortness of Breath** (SOB) and **Stridor.** **The first step to do is to** → **Cut the subcutaneous Sutures**. This is likely a post-thyroidectomy complication called (**Hematoma**). It compresses the trachea and causes upper airway obstruction. Cutting the sutures would relieve the pressure and improve breathing. If not → Consider intubation.

Key 55

Remember:

◙ For a patient undergoing **colorectal surgery**, the **prophylactic antibiotics**

→ **IV Cefuroxime + Metronidazole**

◙ They are given in the **first 30 minutes of the first incision** made or:

√ **At the induction of anaesthesia** (Important).

Key 56

Notes on Diagnosing Appendicitis

◙ **Abdominal pain that started centrally** (**Peri-umbilical**) then shifted to the **Right iliac fossa** → **McBurney's sign**.

Remember that umbilical region and appendicitis share the same dermatome (T10). However, later on when there is peritoneal irritation, the pain will become localised to its origin (Right iliac fossa).

◙ Nausea, **Vomiting**, **Loose stools**.

◙ **Tenderness**, **Rebound Tenderness** over the **Right iliac fossa**.

◙ **Fever**.

◙ **High WBCs** and **CRP**.

◙ **+ve Rovsing's sign** → applying pressure on the left iliac fossa → pain is felt on the right iliac fossa.

♦ **Note**: Do not get tricked by a Hx of Pregnancy in a patient.

	Central Abdominal pain then shifted to Right iliac fossa Pain, Tenderness, Rebound Tenderness + Vomiting, loose stools, High CRP → Think of **Appendicitis**. *Other Appendicitis Signs for your knowledge* • **Dunphy** sign: increased pain with any coughing or movement • **Rovsing** sign: is RLQ pain that is induced by palpation of the left lower quadrant and is highly suggestive of a RLQ inflammatory process. • The **obturator** sign: is seen with inflammation of a pelvic appendix and refers to pain on internal rotation of the right hip. • The **iliopsoas** sign: is most often seen with a retrocecal appendix and refers to pain on extension of the right hip.
Key 57	For **Colorectal cancer**, **Old age** followed by **Family History** constitute the greatest risk factors. "do not get tricked and pick smoking"! For **Urinary Bladder cancer** → **Smoking** is the most important risk factor.
Key 58	A patient with right upper quadrant pain that radiates to the shoulder found to have Gallstones. He is vitally stable. What should be done? → **Elective Laparoscopic Cholecystectomy**.

Notes:

♦ **As there are symptoms (RUQ pain)**

→ Reassurance is wrong.

♦ **As he is vitally stable and no signs of perforation**

→ Emergency Laparotomy is wrong.

Key 59

◙ Old age + Anemia + Bleeding per rectum + Weight loss + **Left** lower abdominal mass or pain → **Sigmoid carcinoma**.

◙ Old age + Anemia + Weight loss + **Right** lower quadrant pain/mass

→ **Caecal Carcinoma**.

Key 60

Acute Mesenteric Ischemia	Ischemic Colitis
Sudden onset	Onset is gradual over hours
VERY SEVERE pain and tenderness.	Moderately Severe.
Hx of AF AF → embolization to superior mesenteric artery → acute mesenteric ischemia.	Multifactorial (transient interruption of blood supply) e.g. HF. HF on top of MI.
-	Usually starts at left iliac fossa

VBG → High Lactate (↑ lactate).	± Bloody diarrhea.
Rx: Urgent Surgery	Conservative or Surgical

Scenario (1)

An old patient presents whit 2-hour **severe** and persistent abdominal pain of an **acute** onset. There are abdominal **dissension**, generalised **tenderness** and **absent bowel sounds**.

Venous blood shows lactate of 6 (Normal: 0.6-2.4)

ECG → **Atrial Fibrillation**.

→ **Acute mesenteric ischemia**

Scenario (2)

An old patient with **Heart failure** and Diabetes presents complaining of a 16-hour abdominal pain that has begun at the **lower left** abdominal quadrant. The pain is of a **gradual onset**. On examination → generalised abdominal tenderness, mild fever and **rectal** examination shows **blood**.

→ **Ischemic Colitis**.

Scenario (3) ***Recent Question:***

A 60 YO man presents complaining of severe abdominal pain and bloody stools. The pain is cramp-like and is of a gradual onset. He had MI 2 days ago and was treated with thrombolysis. He also takes azathioprine for crohn's disease. His HR is 90 and Temperature 37.5 C.
What is the likely cause for abdominal pain and bloody stools?

Gradual onset pain + Bloody stools + MI
→ **Ischemic colitis**.

The question also asked about **the site.** You need to know that Ischemic Colitis is commonest at the **Splenic Flexure** as this area has **fewer collaterals** (called: **weak spots/ watershed**)

The answer is:
→ Ischemic colitis at the splenic flexure

Another correct answer:
→ ischemia at watershed areas of splenic flexure and rectosigmoid.

The stem does not mention signs of flare-up of CD.

Key 61	A child with fluid-filled mass on the midline of his neck below the hyoid bone. It is non-tender and it moves upward on tongue protrusion and on swallowing. The likely Dx → **Thyroglossal Cyst**. The most appropriate Investigation → **ULTRASOUND** Not FNAC!  Ultrasound alone is sufficient to confirm the diagnosis of thyroglossal cyst in the majority of cases.
Key 62	**Offensive** yellow **discharge** from an area near the nipple + **Hx of Abscess** near this area that was surgically treated → **Ductal Fistula** (**Mamillary Fistula**).

Key 63

Dysphagia + Regurgitation of Stale food/fluid + Chronic Cough (esp. Nocturnal) ± Bad mouth breath (Halitosis) ± Aspiration

→ **Pharyngeal pouch** (**Zenker's Diverticulum**)

♦ **Endoscopy is Contraindicated** as it may perforate the pouch.

Instead, request → **Barium Swallow**.

Old age + *Gradually Worsening Dysphagia* (initially for solid food and then for soft food and liquids) + Longstanding **Gastric Reflux**

→ Think of **Oesophageal Carcinoma**.

♦ Diagnosis is made by → **Upper GI Endoscopy + Biopsy.**

Key 64

Old age + Earache (Ear pain) + Painful/discomfort swallowing + Lesion/ Ulcer on the mouth (e.g. at the back of the tongue) + Palpable, non-tender Cervical LN.

→ Think of **oropharyngeal Carcinoma**

◘ *Oropharyngeal Carcinoma presents with:*

√ a **lump or ulcer in the mouth or throat**,

√ referred otalgia,

√ persistent sore throat and painful swallowing,

√ in a typically **old and smoker** patient.

Other DDx:

Nasopharyngeal Carcinoma

- Swollen cervical LNs → a **painless** swelling or lump in the upper neck.
- Eustachian tube obstruction → **Otitis media**, **Epistaxis "recurrent nose bleeds"**, **Nasal obstruction**.
- Others: **Conductive hearing loss**, Tinnitus.
- RFx: **EBV** (specific), **Smoking**, **Alcohol**.

N.B: **EBV** → Hodgkin's lymphoma, Nasopharyngeal carcinoma.

Tonsil Carcinoma (a form of oropharyngeal carcinoma)

- **Persistent sore throat** (over weeks).
- Progressive **Hoarseness** of voice.

- Dysphagia and **painful swallowing**.
- Feeling of a **persistent lump** in the **throat**.
- **Palpable lump on the anterolateral portion of the neck.**
- N.B. ***the absence of weight loss does not exclude the tonsil cancer***!
- Tonsillar cancer spreads to → **Mandible** (important)

⟶ Pain in the throat + Trismus (spasm of the jaw muscles, causing the mouth to remain tightly closed).

◘ One important differential diagnosis is **Quinsy (Peritonsillar abscess)**

Peritonsillar abscess usually presents after a Hx of tonsillitis or sore throat for several days.

◘ Quinsy "Peritonsillar abscess" presents with:

√ severe **trismus** (which is lockjaw = spasm of jaw muscles),

√ Drippling of saliva,

√ Otalgia (as CN IX glossopharyngeal nerve supplies both the ears and tonsils),

√ Hot potato voice,

√ uvular deviation.

√ Red and inflamed bulge (or) swelling **beside the tonsil** (above and lateral to a tonsil)

	◙ **Plummer Vinson Syndrome**: √ **Iron Deficiency Anemia (IDA)**, √ **Glossitis**, √ **Dysphagia** (due to post-cricoid **oesophageal web**). It is a risk factor for **oropharyngeal carcinoma** It is common in **postmenopausal women**.
Key 65	◙ **A man presents with severe pain in anus especially on defecation. He has a Hx of constipation.** **The likely Dx → Anal Fissure.** ◙ A man presents with **severe pain in anus** especially on **defecation, blood streaks** on the stools and Hx of **constipation.** **The likely Dx → Anal Fissure.** ◙ **Management of an acute anal fissure (< 6 weeks):** √ Dietary advice: high-fibre diet with high fluid intake.

	√ Bulk-forming laxatives are first-line – if not tolerated then lactulose should be tried. √ Lubricants such as petroleum jelly may be tried before defecation. √ Topical anaesthetics. √ Analgesia. ◙ **Management of a chronic anal fissure (> 6 weeks):** √ The above techniques should be continued. √ Topical glyceryl trinitrate (GTN) is first-line treatment for a chronic anal fissure. √ If topical GTN is not effective after 8 weeks, then secondary care referral should be considered for surgery (sphincterotomy) or botulinum toxin.
Key 66	**Remember that:** ◙ **Inguinal Hernia** → **ABOVE** and Medial (some say lateral) to the pubic tubercle. ◙ **Indirect inguinal hernia** → **Passes through the deep and the superficial inguinal ring** (Passes through the entire length of the inguinal canal) and lies **LATERAL** to the inferior epigastric artery. ◙ **Direct inguinal hernia** → **Passes through the Posterior wall of the inguinal canal** "directly".

	It does not pass through the deep and then the superficial ring of the inguinal canal as the indirect hernia does. **So, indirect inguinal hernia passes through the deep inguinal ring.**
Key 67	A patient who is **not breathing** after being exposed to burn. **Intubation has failed**. The next step is: → **Cricothyroidotomy** The structure to be pierced → **Cricothyroid membrane**
Key 68	Abdominal pain, distension, tenderness, empty rectum, **Noisy hyperactive bowel sounds**, constipation. The likely Dx → **Intestinal Obstruction**. If after surgery → "**Mechanical bowel obstruction**" "due to post-operative adhesions" Chest X-ray would show → multiple **air-fluid levels**. The next best step → **Urgent refer to surgical ward**. Imp √

	(Note, this resembles paralytic ileus. However, in paralytic ileus, bowel sounds are absent. Also, in paralytic ileus, there is usually a Hx of recent abdominal surgery or immobilisation and it is managed by NGT and IV fluid). ◙ In a patient with intestinal obstructions, the emergency team's role is to **deliver IV fluids** and **analgesics** and order **X-ray** and then to → **send the patient to the surgical team**. At surgical ward, they can decide whether the patient needs surgery or conservative management.
Key 69	• *Back pain* + *WEIGHT LOSS* + *Hx of smoking/alcohol* + *Obstructive jaundice* (Jaundice = ↑ conjugated and total bilirubin, Pale stool, Dark urine, Pruritus = itching, ↑ ALP) + *Abnormal LFT* + *High blood glucose* + *Palpable Gallbladder (± Palpable mass at epigastrium)* **Think →** *Cancer head of pancreas*

◙ Chronic Alcohol intake → Chronic Pancreatitis (Epigastric pain that radiates to the back) → RF of Pancreatic carcinoma.

Why not Cholangiocarcinoma?

♦ In cholangiocarcinoma, the pain would be in the **Right Upper Quadrant (RUQ)**, not in the back or epigastrium.

♦ **The triad for Cholangiocarcinoma** → **Jaundice**, **Weight Loss**, **RUQ pain**.

♦ Also, note that in **pancreatic** carcinoma, the **blood glucose elevates**.

Why is there obstructive jaundice?

This is because as the cancer grows, it **blocks the biliary tract**.

Investigations of cancer head of pancreas.

√ Initial → Ultrasound.

√ The investigation of choice → **High-resolution CT scan**.

√ Prognosis → CA 19-9

Management of cancer head of pancreas.

- In patients **without** metastasis → **Whipple's resection** (Pancreaticoduodenectomy).
- In patients **with** metastasis → **palliative ERCP with Stent**.

Key 70

◙ **While performing laparoscopy, the anatomical structure(s) to be pierced while inserting a port (trocar) at the midway point between umbilicus and anterior superior iliac spine is**

→ **Internal oblique muscle and external oblique aponeurosis**.

◙ **During a laparoscopic cholecystectomy, the midline structure that is pierced**

is → Linea Alba

Key 71

Cancer Screening Programmes available in the UK

• Colorectal Cancer Screening:

√ Fecal Immunochemical Test (FIT).

√ 60-74 YO every 2 years in England

And 50-74 in Scotland

• Breast Cancer Screening:

√ (Mammogram).

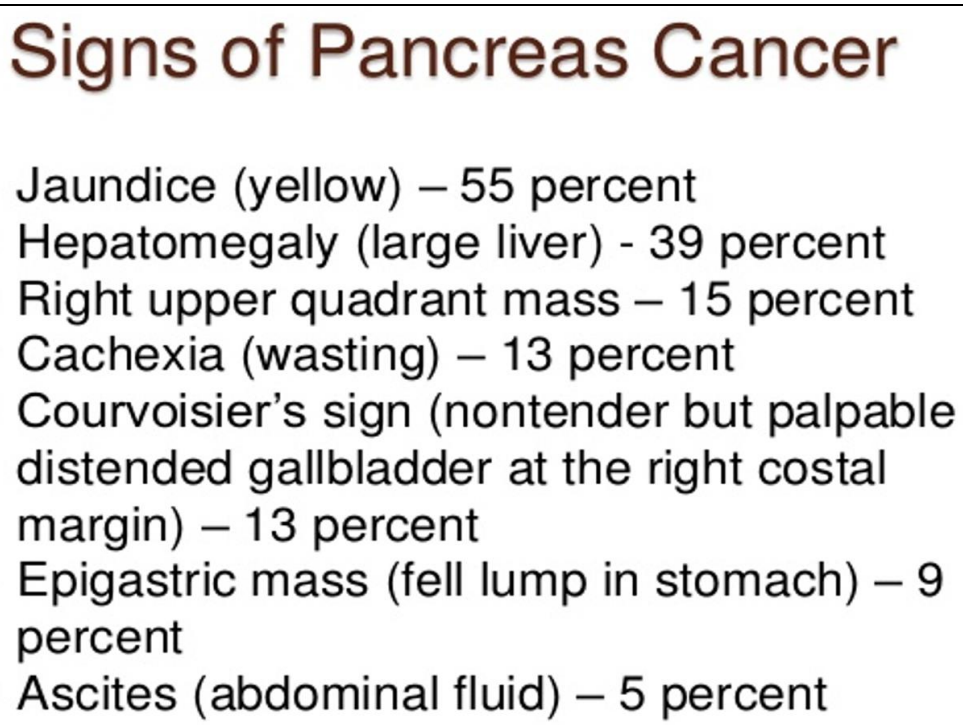
√ ♀ 50-70 YO every 3 years.

√ Those with high risk → 40-70 YO annually.

	• Cervical (Cervix) Cancer Screening: √ (Pap smear: Cytology, HPV) √ 25-49 YO → every 3 years. √ 50-64 → every 5 years.
Key 72	**Palpable mass at scrotum** **Reducible** **Impulse** and **enlarges** on **cough** → **Inguinal Hernia**. **Note**: Only **indirect inguinal hernia** can descend into the **scrotum**. **Note**: **Incisional hernias** do not exist in scrotum, they develop at the "**Incision Site**" of a previous wound of surgery.
Key 73	**◙ In breast Abscess, the commonest causative organism is** → **Staphylococcus aureus**.
Key 74	**A lady presents with Dry skin around the areola, Itching in the area, Discharge per nipple sometimes bloody** → **Paget's disease**

	(do: Punch biopsy).
Key 75	**◙ An old man with abdominal distension and pain, vomiting. O/E, empty rectum and high-pitched exaggerated bowel sounds.** → **referral to surgery** (Bowel Obstruction in managed by a **Surgical team**).
Key 76	**A woman presents complaining of hoarseness of voice. Which nerve might be affected?** → **Recurrent laryngeal nerve**. (For knowledge, not every hoarseness is caused by recurrent laryngeal nerve injury. Laryngitis, vocal cord nodules and tiredness are more common causes for hoarseness). --- • Unilateral Injury to the **Recurrent laryngeal** nerve → **Hoarseness** of voice • Bilateral Injury to the **Recurrent laryngeal** nerve → **Aphonia/ Airway obstruction.** • Injury to the **External** branch of (**superior**) **laryngeal** nerve → **Loss of high-pitched sound** = (**Dysphonia**) = (**Mono toned voice**). N.B. About 18% of **Lung cancer** patients experience **hoarseness** of voice due to compression of the tumour on the **recurrent laryngeal nerve**.

	Recurrent laryngeal nerve is a branch of the **Vagus** nerve (10th CN)
Key 77	**A lady underwent radical mastectomy. Later on, she developed upper limb swelling and redness.** **The likely Dx → Lymphoedema.** --- **Axillary Lymph nodes clearance** (removal) during **radical mastectomy** can lead to → **Upper Limb Lymphoedema** (Redness and Swelling) ± Frozen shoulder. Rx → Physiotherapy and arm exercise.
Key 78	**An elderly man presents with Back pain, weight loss, Hx of smoking/alcohol, jaundice, High blood glucose. He has palpable liver and gallbladder** Likely Dx → **Cancer of Pancreas**. --- **An elderly man presents with a 6-month history of jaundice, pale stool, dark urine and weight loss of 10 kg. He has abdominal pain that is worse after eating. He has a palpable mass at the epigastrium. His Bilirubin, ALT, AST and ALP are elevated.** Likely Dx → **Cancer of Pancreas**.



Key 79

A 55 YO lady was found to have high glucose in urine after surgery.

→ **Stress Hyperglycemia**.

Stress hyperglycemia:
Post-op or stress or post-trauma or some diseases → high cortisol → high glucose → **glycosuria** (glucose in urine)
This subsides on its own in a few days.

What to do next as follow up? **FASTING blood glucose** (although it is a normal phenomenon, we need to make sure of our diagnosis of the Stress hyperglycemia).

Key 80	**A 22 YO female presents with firm, non-tender and mobile mass in her right breast.** The likely Dx → **Fibroadenoma**
Key 81	**A patient is due for elective hernia repair and his Hb was found to be 8.2.** → **"Postpone" the surgery and Investigate for the anemia** --- **A patient is due for elective hernia repair and his Hb was found to be 10.3.** → **Proceed with the surgery** --- **A patient is due for emergency laparotomy and his Hb was found to be 8.2.** → **Proceed with the surgery** --- **A patient is due for emergency laparotomy and his Hb was found to be 7.2.** → **Transfuse blood and proceed with the surgery** ◙ **Elective Surgery:**

	♠ **If Hb is > 10** → **Proceed** with the surgery ♠ **If Hb is between 8-10**→ Delay "**defer**" "Postpone" the surgery and **Investigate** for the anemia reasons first. ♠ **If Hb is < 8** + Symptomatic → **Transfuse** Blood and also **Defer** the surgery. ◙ **Emergency Surgery:** ♠ **If Hb is > 10** → **Proceed** with the surgery ♠ **If Hb is between 8-10** → **Proceed** with the surgery. ♠ **If Hb is < 8** → **Transfuse** Blood and **Proceed** with the surgery "it is emergency"!
Key 82	**Hx of Trauma to the Breast (redness or bruises around the lump) + firm, round, solitary and localized lump** → **Fat Necrosis.**
Key 83	**A 60 YO man presents complaining of severe abdominal pain and bloody stools. The pain is cramp-like and is of a gradual onset. He had MI 2 days ago and was treated with thrombolysis. He also takes azathioprine for crohn's disease. His HR is 90 and Temperature 37.5 C.** **What is the likely cause for abdominal pain and bloody stools?** Gradual onset pain + Bloody stools + MI → **Ischemic colitis**.

	The question asked about **the site** also, you need to know that Ischemic Colitis is commonest at the **Splenic Flexure** as this area has **fewer collaterals** (called: **weak spots/ watershed**) The answer is: → Ischemic colitis at the splenic flexure Another correct answer: → ischemia at watershed areas of splenic flexure and rectosigmoid. The stem does not mention signs of flare-up of CD.
Key 84	Post-hemicolectomy, a patient was commenced on parenteral morphine for pain. 2 days later, he developed SOB with RR of 30 and O2 saturation of 87%. The most appropriate management → **Commence O2 by face mask immediately**. (ABC: Airways, breathing, circulation). Remember that (opioid toxicity → ↓ RR -resp. depression-). Here, ↑ RR.
Key 85	◙ A stem with long history of a patient after RTA being managed in a critical care unit with an X-ray showing an **NGT curled** above the hemidiaphragm. **Coiled NGT after Road Traffic Accident → Diaphragmatic Rupture.**

Key 86	◙ Testis cancer → request **LDH (lactate dehydrogenase)**
Key 87	◙ Woman with breast cancer and widespread metastasis, has developed an increased thirst, Constipation and confusion. What is the likely cause? → **Hypercalcemia**.
Key 88	◙ Hx of **Undescended Testis** (Cryptorchidism) increases the risk of **testicular cancer** by 10 times (Particularly: Seminoma "a germ cell tumor") for which, we request Lactate Dehydrogenase (**LDH**).
Key 89	◙ **A patient is on warfarin and has surgery in a few days** → **Stop Warfarin and commence LMWH** LMWH = Low Molecular Weight Heparin [e.g. fondaparinux, enoxaparin].
Key 90	**A 27yr old woman with redness around her areola of 4 weeks duration. She had used some antibiotics which improved her symptoms slightly. 5ml of greenish fluid was aspirated from the breast. She smokes regularly. What is the most likely diagnosis?** A. Breast abscess B. Breast cancer C. Duct papilloma D. Paget's disease E. **Periductal mastitis**

	' **Periductal mastitis**. (commonly young age, smoking is a risk factor, treated with antibiotics, if left untreated it may develop into an abscess that needs drainage by fine needle)
Key 91	**A man who just had surgery a few hours ago. Urine bag is not draining. Vitals are stable. What to do next?** a) **check the catheter for blockage** b) exploratory laparotomy c) give furosemide D) fluid challenge
Key 92	**Patient Came back after 7 days of adeno-tonsillectomy, vomiting blood. Temp 38.5. What is the most appropriate step?** A. **Admit for IV antibiotics** B. Admit for FFP and Vit k C. Discharge home with oral antibiotics D. urgent surgical exploration of wound site **Tonsillectomy Complications** • **1ry Bleeding** (within the first 24 hours) → **Return to the theatre** may be required. Usually due to inadequate haemostasis, displacement of a tie, loss of eschar. • **2ry or Reactive Bleeding** (occurs more than 24 hours post-op = 1-10 days post op, and usually after discharge)

	Usually due to wound **infection** that leads to vessel erosion; thus, **Admit the patient and give IV Antibiotics**. (Antibiotics and Antiseptic mouthwashes are also indicated).
Key 93	**27-year-old Woman with a 1.5 cm lump, tender, firm in left breast. What is the appropriate Investigation?** A. **Ultrasound of breast** B. mammogram C. FNAC D. excision biopsy E. punch biopsy **Generally**: ♠ ♀ < 35 YO → **Ultrasound**. ♠ ♀ > 35 YO → **Mammogram**. **√ Fine needle aspiration may follow (based on the US result).** **√ Punch biopsy is for Paget's disease of the breast (eczema like, Dry skin around the areola, Itching in the area, Discharge per nipple sometimes bloody).**
Key 94	**A 21 YO lady presents with positive family hx of breast ca, has a mass that's firm, painless, mobile, not attached to anything, skin over it is intact. Her mother had breast ca. Most likely diagnosis?** a) Paget's b) Ductal papilloma c) Fibrocystic change

	d) **Fibroadenoma** e) Breast cancer Despite the Hx of breast cancer in mother, the features of the mass and the young age are suggestive of fibroadenoma (young age, MOBILE mass, not attached to the underlying structures). ◙ Firm, non-tender, mobile mass in a breast of a young ♀ (15-30 YO) → **Fibroadenoma** → **Clinical** + **Ultrasound** + **FNA**
Key 95	**Patient with advanced ovarian carcinoma with gaseous distension and intermittent pain. Management?** A. Hyoscine Butylbromide B. SC morphine C. **Surgical palliative care with stoma** D. NG tube **If bowel obstruction occurs due to advanced malignancy or as a complication of chemotherapy, conservative treatment is not an option as in most cases it fails. So, the answer for this question is** **→ C. Palliative colostomy.**
Key 96	**38 yr old woman who presented with passing of blood per rectum. She complained of occasionally staining of toilet paper for about 3 months with blood. There was an episode when she was just passing blood while trying to defecate. On examination, perineum is normal, no mass felt in the rectum, rectum is empty. Gloved finger not stained with blood. What is the next best investigation?**

	A) Colonoscopy B) **proctoscopy** C) Fecal calprotectin test D) Faecal occult blood test Proctoscopy is a scope that visualises the Rectum. Based on the age and the features (blood stained toilet tissues), this is likely a case of **internal haemorrhoids (Piles)**. An episode of passing **fresh blood** only means that the defect is **distal** (mostly in the rectum). **Because internal haemorrhoids are often too soft to be felt during a rectal exam, your doctor might examine the lower portion of your colon and rectum with an anoscope, proctoscope or sigmoidoscope.** Kindly note that if this patient was an old age and with other symptoms such as a change in bowel habits, anemia, abdominal pain → colorectal carcinoma should be among the possible differentials and → **colonoscopy** is to be done.
Key 97	**A man has just got out of the theatre for cholecystectomy. Vitals are stable except BP which is 90/50. Pulse is 120. What is the next step to carry out?** a. **Fluid challenge** b. Adrenaline c. Dopamine Likely primary hemorrhage. He is hypotensive. The (**initial**) = (**next**) step is **IV fluid**.

Remember:

Types of Surgical Bleeding

Primary hemorrhage	**Bleeding at the time of surgery.**	**Rx: Replacing Blood or return to theatre if severe.**
Reactionary hemorrhage	**Bleeding within 24 hours after surgery/ Trauma.** **e.g. a patient bleeding and hypotensive while in the recovery room.**	**Usually due to slipping of ligatures, dislodgement of clots, warming up post-op leading to vasodilatation and rising of BP to normal.** **Rx: Replacing blood (IV fluids and Packed RBCs if heavy), wound re-exploration.**
Secondary hemorrhage	**1 to 2 weeks post-op**	**Usually due to necrosis of blood vessels related to the previous repair, and precipitated by wound INFECTION.** **The patient may require admission and IV antibiotics.**

But in this stem, it asks about the **next** step. ABC [**C** = **C**irculation → correct the low BP by IV fluid NS first. If still low BP → Packed RBCs].

Key 98	**A woman with Hx of Crohn's disease presents complaining of foul-smelling feculent discharge from her vagina. A fistula is suspected. What is the most likely structure that would be involved in the formation of this fistula with vagina?** **→ Rectum "rectovaginal fistula". If Not in the options, pick → ileum.** √ Although the rectum is rarely involved in CD, it is the most common site of fistula (Rectovaginal fistula). √ Ileum is the most common part to be involved in CD; "ileitis" but rarely forms fistula. √ Remember, in males with CD, the fistula is usually between the urinary bladder and the rectum.
Key 99	**When is the repair of Inguinal Hernia required?** **◙ If the inguinal hernia is Reducible + Asymptomatic** → No surgery is required "especially in old age". **◙ If the inguinal hernia is Symptomatic** → Repair to prevent the risk of future strangulation. **◙ If the inguinal hernia is Irreducible** → Urgent repair to avoid strangulation. **Inguinal hernia:**

√ Above and medial to pubic tubercle.
√ Impulse on cough.
√ Mostly in Males.

○ **Direct inguinal hernia** → passes through the posterior wall of the inguinal canal directly. Lies **medial** to inferior epigastric artery.

○ **Indirect inguinal hernia** → passes through the superficial and the deep inguinal ring "passes through the whole length of the inguinal canal". Lies **lateral** to inferior epigastric artery. Can descend into the scrotum.

• These descending into the scrotum will **not** trans-illuminate and it is **not** possible to 'get above' the swelling.

• Cases that are unclear on examination, but suspected from the history, may be further investigated using ultrasound or by performing a herniogram.

Management of Inguinal Hernias (If surgery is required):

◙ **First time hernias** may be treated by performing an open inguinal hernia repair; the inguinal canal is opened; the hernia is reduced and the defect is repaired.
A prosthetic mesh may be placed posterior to the cord structures to reinforce the repair and reduce the risk of recurrence.

◙ **Recurrent hernias** and those which are **bilateral** are generally managed with a laparoscopic approach. This may be via an intra or extra peritoneal route. As in open surgery, a mesh is deployed. However, it will typically lie posterior to the deep ring.

	Remember: √ Asymptomatic Gallstones → No surgery required. √ Asymptomatic Hernia (esp. in elderly) → No surgery required. √ Asymptomatic Haemorrhoids at any age and stage → No surgery required. --- **Femoral Hernia** √ More common in females. √ Below and lateral to pubic tubercle. √ usually irreducible, and with a high risk of strangulation. √ **Careful**: Femoral hernias need to be surgically repaired even if asymptomatic!
Key 100	**A 72 YO man is scheduled to undergo transurethral resection of the prostate. During pre-op examination, the doctors found a small swelling on his right groin. It is reducible, impulses on cough and not tender. The patient does not have abdominal discomfort nor constipation. What is the management of this swelling?** → **No surgery is required**. √ This is likely an inguinal hernia and since it is asymptomatic and particularly, he is old age, no surgery is required as explained in the precious key.

	√ However, he should be instructed to seek medical advice if symptoms such as pain have developed in the future.
Key 101	**A 24 YO man has undergone radical orchidectomy 1 month ago for testicular carcinoma. He now presents with a painful swelling in the groin that appears to be located below and lateral to pubic tubercle. What is the likely Dx?** → **Inguinal hernia.** Although anatomically, it should be femoral hernia. However, the approach used in radical orchidectomy in adults is the (**inguinal**) approach. So, this patient has (inguinal hernia). Kindly note that determining the type of hernia by only physical appearance is very difficult and there are conflicting views.
Key 102	**A 50 YO man had proctocolectomy 2 weeks ago. He now presents with fever, malaise and abdominal pain. The patient's history includes DM type 2 and Crohn's disease. His temperature is 39.4, tachycardic and normal BP. What is the likely Dx?** → **Pelvic abscess.** √ Pelvic abscess has developed here either due to CD or as a post-operative complication. √ Being **diabetic** increases the risk this complication.

	√ Investigation → **CT scan**. (important) √ Rx → **Drainage + Antibiotics**.
Key 103	◙ A man presents with 2 episodes of passing blood per rectum after defecation. There **is no pain**. There are splashes of blood around the toilet bowl and streaks of blood on the toilet paper. **The likely Dx → Internal haemorrhoids "piles".** **To diagnose**? → Proctoscopy **or** rigid sigmoidoscope. ◙ A man presents with **severe pain in anus** especially on **defecation, blood streaks** on the stools and Hx of **constipation.** **The likely Dx → Anal Fissure.** *IMPORTANT NOTES:* ♠ **Haemorrhoids** → Blood + Intermittent, bearable "tolerable" pain or painless, splashes of blood. (internal hemorrhoids are usually painless unless they have started to prolapse out). ♠ **Perianal Abscess** → Throbbing pain, swelling, Usually No blood. ♠ **Anal fissure** → Intense pain (unbearable), acute pain, streaks of blood.

Key 104

Splenectomy Vaccines in the UK

◙ **Pre-splenectomy: Pneumococcal + Meningococcal vaccines.**

◙ **Post-splenectomy: influenza vaccines.**

This is the regimen: 4-6 weeks before splenectomy, they would receive pneumococcal and meningococcal vaccines. However, if it is an emergency splenectomy and there was no time to give pre-splenectomy vaccines, then, read the following:

Very IMPORTANT:
What if the patient DID NOT receive pre-splenectomy vaccines?
If the patient did not receive pneumococcal vaccine before splenectomy (eg, in emergency splenectomy), the most crucial vaccine to be given post splenectomy (after operation) is → Pneumococcal vaccine. √

Additional notes:
√ Pneumococcal and Meningococcal vaccines are also given every 5 years after splenectomy.
√ All patients with asplenia or hyposplenia should receive annual influenza vaccine due to the high risk of 2ry bacterial infection. The best time is autumn (October, November) before the onset of the "peak flu season".

Key 105

An elderly patient + Tenesmus (feeling of incomplete defecation) + Altered bowel habits (constipation alternating with diarrhea) + Blood per rectum: Think → Colon or Rectal cancer.

	In the case of diverticulitis, there is usually lower left abdominal pain + Fever + Tachycardia. Take a look at the following example: A 60 YO ♀ presents to the ED complaining of passing large amount of bright red blood + Left lower abdominal pain for 2 days that is worse after eating + Nausea but with no vomiting. The patient's main diet is canned meat. There is localised left lower abdominal tenderness without rigidity or rebound tenderness. On examining the rectum, blood is found on the examiner's glove. Vital signs: (BP: 85/55), (HR: 105), (Temperature: 38°C), (RR: 19). ◙ The likely diagnosis → **Bleeding diverticulitis**. ◙ The most appropriate step → **Urgent admission to the surgical ward**. ◙ The most appropriate "INITIAL" step → **IV fluid (she is hypotensive**). In a case of acute diverticulitis "without rectal bleeding". E.g., there is fever, tachycardia, left iliac fossa pain, tenderness and guarding, Hx of constipation → Start IV antibiotics.
Key 106	**A female patient has finished her surgery (cholecystectomy) 7 hours ago and is now the surgical ward. She has nausea, blurred vision, confusion. Her vitals are stable except for hypopnea (7 breaths per minute). What is the likely cause?**

	→ **Morphine (opiates)**. √ **Morphine overdose** can cause all these side effects, including the respiratory depression (low RR). √ Atelectasis, pulmonary embolism and hemorrhage do not present with hypopnea (low respiratory rate).
Key 107	♦ **Intermittent**, **Burning** or **Stabbing** Pain in one part of one breast that may radiate to axilla, **no** palpable **masses** or lumps and no enlarged LNs → **Non-cyclical Mastalgia** → **Gabapentin/ Amitriptyline can be useful**. **Important:** ♦ If there is a mention of an association with menstruation (the pain increases a few days before the menstrual cycle and subside after it), No lumps, but there may be swelling and tenderness in **both** breasts. → **Cyclical Mastalgia**. → **Advise her to wear a supportive bra**. **√** **Another valid answer:** → **Advise her to wear a better fitting bra during the day and a soft support bra at night**. **√** **Another valid answer:**

	→ **Advise her to take paracetamol**. √ • If the pain is unilateral and there are lumps, nodularity, and is related to menstruation, think of **Fibroadenosis**. •If the pain is bilateral, no lumps, and is related to menstrual cycles, think of **cyclical Mastalgia**. --- Breast pain (Mastalgia), ↑ breast size, lumpiness (nodularity) of the breast, ♀ in the reproductive age, tends to appear just before or during menstrual cycle and disappears after it → **Fibroadenosis**.
Key 108	**Which of the following is an absolute contraindication to elective surgery?** **A) Recent MI. (within the last 6 months)** **B) Previous Pulmonary Embolism (done 2 years ago).** **C) Uncontrolled DM.** **d) Uncontrolled HTN.** **e) Anemia.**

Key 109	After **hemicolectomy**, or Rectal Resection and anastomosis, one of the common and feared complications is → **Anastomotic Leak** (Leakage of luminal contents at the site of anastomosis). - It usually occurs **5 to 10 days** after the surgery. - It presents with **severe, generalized abdominal pain** and **tenderness** over the site of the anastomosis + **fever** + **reduced bowel sounds**. ± Hypotension. - RFs → **DM**, **smoking**, **immunocompromised** (e.g., prolonged use of **steroids** such as for RA, Asthma, COPD), **rectal anastomosis**, **peritoneal contamination**). **Important:** Anastomotic leakage can lead to **Peritonitis** or **Intrabdominal abscess** which needs → **CT scan of Abdomen and Pelvis** "with contrast". • Broad spectrum antibiotics should be initiated. An important risk factor for anastomotic leakage and abscess is → **DM**.
Key 110	Iron deficiency anemia + Old age (>60 YO) + No other symptoms (No blood in stool, constipation, or abdominal pain). If **colorectal cancer** is suspected, the site of the tumor would be → The right colon (**Cecum**).

	Iron deficiency anemia (IDA) alone is a common presentation of right-sided colon cancer (as it is wider than the left side, thus usually no symptoms of obstruction until very late). Also, bleeding from the right colon may go unnoticed for a while. On the other hand, left-sided colon cancer (e.g., sigmoid) can present with constipation, abdominal pain, blood in stool as well as IDA. (Not all features have to be present at the same time!). You always need to suspect colorectal cancer in any patient who is Old age + Weight loss ± IDA.
Key 111	**Unexplained breast lump in a female > 30 YO** → Refer to the breast clinic to be seen within 2 weeks. (even if she has had mammography recently, the unexplained breast lump can be cancerous and just developed today!). **In a breast clinic, triple assessment are done:** √ Clinical → History and examination. √ Imaging → U/S (< 35 YO) ▌Mammogram (> 35 YO). √ Biopsy → FNAC or core biopsy.

Key 112	**Splenic Injury** ◙ If the patient is hemodynamically **stable** → Pick a non-surgical option (e.g., admit and observe under surgical team). ◙ If the patient is hemodynamically **unstable** → Exploratory laparotomy ± splenectomy.
Key 113	√ **Oral Candidiasis** → Thick white marks + **Can** be rubbed out ± Inflamed mouth. √ **Leukoplakia** → White marks, **cannot** be rubbed out, sharply defined. **A newly formed ulcer on top of a previous Leukoplakia** **Think → SCC "Squamous cell carcinoma".**
Key 114	**Pain in the right lower quadrant + vomiting + ↑ inflammatory markers** **→ suspicious appendicitis/ ovarian pathology if female.** ***After stabilizing the patient (e.g., IV fluids, analgesics), what should be done next?***

◙ **If haemodynamically unstable → take to theatre (**exploratory laparotomy).

◙ **If haemodynamically stable (SBP > 90), it depends:**

√ If **young** fit **male** → **straight to theatre** "laparoscopic appendectomy".

√ If **young** fit **female** → do **Ultrasound** first before taking her to theatre "to rule out gynaecological cause".

√ any gender **> 50 YO** → **CT** scan "to rule out cancer as a cause of the symptoms".

Example:

A 22 YO female presents to the ER complaining of 1 day of constant right lower quadrant pain + nausea + vomiting. Her BP is 120/80. Her body temperature, WBCs, and CRP are elevated.

The NEXT step → **Ultrasound** (*before doing laparoscopic appendectomy; to rule out any gynaecological pathology*).

Key 115	**A 56 YO man with ulcerative colitis presents with unexplained weight loss + abdominal pain over the last 9 months. His HB is 10, his ferritin is low. Colonoscopy was done and found an ulcerative mass in the sigmoid colon.** The likely Dx → **Colorectal Adenocarcinoma**. ◙ Unexplained weight loss + Abdominal pain + Iron deficiency anemia Think → **colorectal cancer**. ◙ Patients with **Ulcerative colitis** have a **higher risk** of developing colorectal cancers. ◙ The most common type of colorectal cancer is → **Adenocarcinoma**.
Key 116	**A 23 YO man with a background of Crohn's disease presents complaining of one week of gradually worsening cramping abdominal pain in his right lower quadrant. He also has 10 episodes of diarrhea a day. O/E, the abdomen is tender, a palpable mass can be felt at the right lower quadrant of abdomen. His temperature is 38.3. His WBCs are very high (at 25), his CRP is very hight (at 290), his Hb is 13. He was started on IV antibiotics. What is the single most appropriate investigation?** → **CT abdomen**.

	√ He likely has **ileal Abscess** on top of Crohn's disease. The mass felt on the right abdomen and tenderness along with the elevated inflammatory markers and the gradual worsening pain, all point towards internal right abdominal abscess. √ **CT scan** would identify the abscess size and location. After that, the surgeons will decide to make image-guided percutaneous drainage or a surgical drainage + broad spectrum antibiotics should be initiated.
Key 117	A 30 YO female presents complaining of bilateral breast pain. The pain increases a few days before the menstrual cycle and subside after it. O/E, there are no lumps. She is on COCP. She drinks a cup of tea a day. → **Cyclical Mastalgia.** → **Advise her to wear a supportive bra. √** **Another valid answer:** → **Advise her to wear a better fitting bra during the day and a soft support bra at night. √** **Another valid answer:** → **Advise her to take paracetamol. √** **√ Oral paracetamol, Ibuprofen or topical NSAIDs can help alleviate the pain.**

	As per NICE recommendations for cyclical Mastalgia, NONE of the following is recommended: stopping COCP, reducing caffeine intake, Primrose oil. **√ So, the management of cyclical Mastalgia:** **Analgesia + Supportive bra.**
Key 118	**A 50 YO man went for colectomy with ileostomy 4 days ago for his ulcerative colitis. He has been taking IV morphine to manage post-op pain. Over the past hours, he has been experiencing drowsiness, vomiting and nausea. His temperature is 37.8. His respiratory rate is 7 breaths per minute. He has decreased bowel motion with abdominal distension. CRP is elevated.** The likely Dx → **Opioid toxicity** *"due to morphine" (look for his respiratory depression).* *CRP is normally high after surgery. If the Dx is infection, RR would be high.* Opioid toxicity → **LOW respiratory rate** "the key feature in this stem", Nausea, Vomiting, fever and Decreased bowel motion that can leads to abdominal distension. Paralytic ileus is a good differential diagnosis here as his criteria are: **√ Abdominal Distension "bloating", No passage of flatus "gases".**

	√ Absent Bowel Sounds. **√ Nausea, Vomiting.** **√ Erect Abdominal X-ray → Gases/ air-fluid levels/ dilated small loops.** However, the presence of **respiratory depression** makes opioid toxicity more likely the cause, especially that it can also cause nausea, vomiting and decreased bowel motion. 🔘🔘 Another DDx is anastomotic leakage: - It usually occurs **5 to 10 days** after the surgery. - It presents with **severe abdominal pain** and **tenderness** over the site of the anastomosis + **fever** + **reduced bowel sounds**. - Anastomotic leakage can lead to **Peritonitis** or **Intrabdominal abscess** which needs → **CT scan of Abdomen and Pelvis** "with contrast". - An important risk factor for anastomotic leakage is → **DM**. - There is no respiratory depression in anastomotic leakage. (Infection would increase the respiratory rate, not depress it)!
Key 119	**3 days after open appendectomy, a 40 YO has increasing abdominal discomfort, bloating, not passing gas. O/E: No bowel sounds + mild generalized abdominal tenderness.** **Serum potassium: 2.4 (low), serum calcium: 2 (low), WBCs: 12.**

	The most likely cause of his discomfort → paralytic ileus due to **Hypokalemia**. In a recent exam, the term: "paralytic ileus" was not given. Hypokalemia was the answer. Remember: one of the common causes of paralytic ileus is electrolyte disturbance, including **hypokalemia** and **hypercalcemia**; not hypocalcemia. *Review key 43 if needed.*
Key 120	**A 40 YO female presents with a painful swelling on her right groin. She has been having vomiting and abdominal distension and not been able to pass stool for 2 days. This groin lump is painful, tender, irreducible but it impulses on cough. The lump is below the inguinal ligament on the right groin.** **The likely Dx → Femoral hernia.** ◙ **Inguinal Hernia** → Impulse on cough, reducible. ◙ **Femoral Hernia** → rarely impulse on cough (but it can impulse on cough) + Irreducible as the femoral canal is narrow + tends to occur more in females + easy to strangulate (painful and tender) + often irreducible + appear below inguinal ligament.

Key 121

A 60 YO man has a Hx of constipation now presents with fever, tachycardia, Acute onset of severe left iliac fossa pain, tenderness and guarding.

The likely Dx → Acute diverticulitis.

The Most appropriate management? → Start IV antibiotics (after admission).

√ Guarding is a sign of peritonitis → it requires admission and IV antibiotics.

This patient will need to be kept NPO and IV fluids should be given until surgical review.

√ The fact that there is Fever + Acute abdomen + long history of constipation supports the diagnosis of acute diverticulitis. Fever and sepsis are caused by the leakage of the colon content into the peritoneum ⟶ Peritonitis.

√ Bear in mind that diverticulitis is one of the complications of diverticulosis (which is outpouches of the colon outer wall seen mostly in the sigmoid colon). That is why the tenderness and pain here is in the left iliac fossa (the site of the sigmoid colon).

√ When these pouches get stuck with stools → infection occurs → acute diverticulitis (constipation, fever, pain and tenderness in left lower abdomen).

√ This would need admission and IV antibiotics.

√ NSAIDs eg, ibuprofen should be avoided in diverticulitis (it ↑ perforation).

What is the most likely outcome of acute diverticulitis?

	• The likely outcome of **acute diverticulitis** after treating with IV antibiotics, IV fluids, observation and keeping the patient NPO → Complete resolution (recovery). • Only **20%** of acute diverticulitis cases develop complications such as fistula, abscess, bowel obstruction, perforation and or peritonitis.
Key 122	**A 32 YO woman had done uncomplicated laparoscopic cholecystectomy 9 days ago. She now presents with: right upper abdominal pain and guarding, a fever of 39.2 degrees, and tachycardia. Her BMI is 22 kg/m^2. Her blood results show high WBCs and CRP.** **The most appropriate investigation → CT abdomen.** √ The fever, guarding, high WBCs and CRP suggest the presence of **abscess** at the site of the surgery "*guarding + inflammation = fluid collection*". √ **CT scan** of the abdomen would identify the abscess size and location. After that, the surgeons will decide to make image-guided percutaneous drainage or a surgical drainage + broad spectrum antibiotics should be initiated. √ **ERCP** is done when there is a suspected **bile leak** "usually results after difficult cholecystectomy such as in patients with high BMI, several abdominal surgeries causing adhesions, complications during the surgery". √ ERCP can both diagnose and treat the bile leak by a stent.

	√ Here, the features are going more with **post-op abscess**, therefore, **CT scan of abdomen** should be done quickly to confirm the diagnosis and start antibiotics and drainage. √ Remember that Diabetes is an important risk factor for post-op abscess.
Key 123	◙ **The commonest site of vaginal fistula in Crohns's disease is the** → **Rectum. (**Recto-vaginal fistula**).** ◙ **What if the rectum is not among the options?** → **Ileum (**ileo-vaginal fistula**).** *So, **rectum** followed by **ileum**. (Both have been asked previously).*
Key 124	**A 60 YO woman presents complaining of blood in her stools for 6 months. She has good appetite. She lost 3 Kg of her weight over the past 6 months. She does not have constipation or abdominal pain.** → **Refer for Colonoscopy.** **Age ≥ 50** (+) **Unexplained Rectal Bleeding** → **Colonoscopy**. "suspected colorectal cancer". This patient also has unexplained weight loss despite having good appetite. Eventhough it is a small weight loss, it is still significant for her condition.

Key 125

Important Points on Intestinal Obstruction

- **Previous abdominal** surgery can lead to **adhesions** around intestine.
- with time, these adhesions can lead to **intestinal obstruction**.
- **Manifestations of Intestinal Obstruction**:

√ Vomiting,

√ Colicky abdominal pain,

√ Abdominal distension,

√ Not passing stools for days (constipation),

√ Typanic -resonant- abdominal percussion,

√ Hyperactive high-pitched bowel sound on auscultation,

√ Erect abdomianl X-ray → air-fluid levels, and distended loops of bowel.

- **Initial Management**: The emergency department (A&E doctors) should:

√ Insert Nasogastric Tube (NGT) as an **initial step** to decompress the bowels.

√ Resuscitate with IV fluids.

√ Give IV analgesics.

√ Obtain X-rays.

	• After that, they should refer the patient to the surgical team for further management. (This is because resulting ischemia, strangulation, closed-loop bowel obstruction would require urgent surgery).
Key 126	**A Woman had undergone hip replacement surgery. While in hospital, she developed Shortness of breath, tachycardia and chest pain.** The likely Dx → **Pulmonary Embolism** The investigation of choice → **CT pulmonary angiogram**. As PE is **suspected** → start **therapeutic** dose of DOAC eg, apixaban. "New guidelines". --- **Important Prophylactic Measures (for VTE):** **Scenarios (All asked before):** **Scenario (1)** **A Woman had undergone hip replacement surgery. She is OK now. However, she is expected to stay in the hospital "immobile" for a while. What preventive measures are helpful to prevent DVT, PE?** • **Compression stockings**. • **"Prophylactic dose SC LMWH eg, enoxaparin"**.

	Nothing is suspected. If there was a suspected PE, a treatment dose is needed. Here, these are just preventative measures. So, "prophylactic" dose not treatment dose. These 2 preventative measures are important especially after a long surgery that would require a patient stay immobile for a while. **Scenario (2)** **What if the surgery was one-day simple surgery without risk factors of VTE (eg, hernia repair)?** → **Encourage early mobilisation.** **Scenario (3)** **A Woman has acute stroke and admitted to a ward. What measure is helpful to prevent DVT, PE?** → **Intermittent pneumatic compression. (**Useful after stroke**)**
Key 127	**After a surgery, the patient is bleeding heavily and the entire dressing is soaked with blood. His BP is low. After IV normal saline is given, his BP had raised but still low. What is the next step?** → **Packed RBCs.** This is heavy reactionary hemorrhage (within the first 24 hours after surgery), which requires: • Resuscitation with **IV normal saline**. (**First**). • If still low BP or if the patient had bled heavily → **Packed RBCs**. • **Surgical re-exploration**.

Key 128	**A 60-year-old gym trainer presents with a soft tissue mass below the inguinal ligament and lateral to symphysis pubis. There is no erythema and no impulse on cough.** → **Femoral hernia**. ◙ **Inguinal Hernia** → **ABOVE** and **Medial** (some sources say lateral) to the pubic tubercle. ◙ **Femoral Hernia** → **BELOW** and **lateral** to the pubic tubercle. ◙ **Inguinal Hernia** → Impulse on cough, reducible ◙ **Femoral Hernia** → rarely impulse on cough (but it can impulse on cough) + Irreducible as the femoral canal is narrow + tends to occur more in females + easy to strangulate + often irreducible + below inguinal ligament.
Key 129	• **Mild** pain at the surgical site is expected after surgery (eg, appendectomy). • As long as the patient's vital signs and observations are within normal, and the pain is mild, you can **discharge the patient with analgesics** such as paracetamol and NSAIDs (ibuprofen).

Key 130

Artificial Nutrition

First: Enteral Feeding (NGT VS PEG)

NGT = Nasogastric tube

PEG = Percutaneous Endoscopic Gastrostomy.

◙ Short-Term feeding

→ **NGT** "Nasogastric Tube".

- Usually used first, unless if long-term feeding is required (see below).

- **Example**: a few days after stroke (recent stroke), and the patient has started to get swallowing difficulties. We start with NGT feeding as his swallowing might improve with time. So, we feed him via NGT slowly and refer him to SALT (Speech and Language Therapist) who will assess and encourage his swallowing. If no improvement after a few weeks → PEG.

◙ Long-Term feeding

→ **PEG** "Percutaneous Endoscopic Gastrostomy feeding tube".

- It is surgery to insert a flexible tube through the abdomen into the stomach. Thus, the patient has to be fit for sedation and surgery.

- **Example (1):** A patient with an old stroke (months) and no improvement of dysphagia or swallowing, and he becomes thin (losing weight). This patient needs a long-term feeding method (PEG).

- **Example (2)**: A patient with motor neuron disease (MND) with "progressive" difficulty of swallowing. We know that MND is a chronic degenerative progressive disease. So, we do not expect improvement, but deterioration. Therefore, a long-term feeding would be required (i.e., PEG).

The examples are important and were asked in previous exams

Important Medical Ethics Points:

√ The next of kin (e.g., wife, brother, parents) do **not** have the legal authority to decide even if the patient lacks metal capacity.

√ If the patient who is now lacking mental capacity has an advance directive that states that he does not want to receive a specific intervention such as artificial feeding, doctors **should follow** his advance directive.

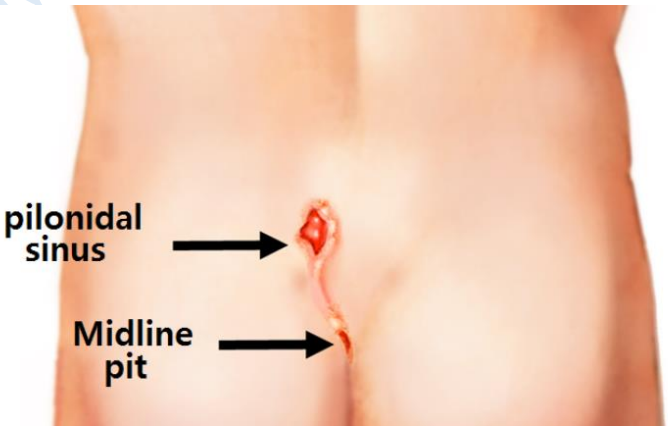
◙ Advance Directive = a living well

A legal document in which a patient writes the treatments/ the procedures that he/she does not want to receive if they become unable to make decisions.

Second: Total Parenteral Nutrition (TPN)

Example:

	A patient is booked for total gastrectomy due to non-metastatic gastric cancer. He is in hospital as his surgery will be done in a few days. He vomits every single meal and cannot tolerate feeding due to gastric cancer (outlet-block). He is malnourished and has lost 18 Kg in the last month. What is the most appropriate feeding method before the surgery? • **The best pre-operative feeding for him** → **Total parenteral nutrition (TPN)** "A temporary method until surgery". NGT and PEG deliver nutrition to his stomach. Thus, they are not suitable as he has gastric outlet obstruction. Any nutrition directed to his stomach would not pass down to small intestine. • **The post-operative method for him would be** → **Jejunostomy feeding tube (J-tube)**. This is a plastic tube that would be inserted (during the gastrectomy surgery) through the skin of the abdomen into the jejunum so that that patient would be able to have enteral feeding after surgery. He would not have a stomach and thus he would need a feeding tube directly to his small intestine (jejunum).
Key 131	**What is the most likely outcome of acute diverticulitis?** • The likely outcome of **acute diverticulitis** after treating with IV antibiotics, IV fluids, observation and keeping the patient NPO → Complete resolution (recovery).

	• Only **20%** of acute diverticulitis cases develop complications such as fistula, abscess, bowel obstruction, perforation and or peritonitis.
Key 132	**A 55-year-old man has an ulcer on his left buccal mucosa for 3 months. In the beginning, it was a white homogenous patch. It did not respond to topical hydrocortisone buccal tablets. His medical history and lab results are unremarkable (normal ferritin, folic acid and vitamin B12). It has later become an ulcer that is 1 cm in diameter. There is a 0.5 mm palpable cervical lymph node on his left neck. What is the most likely diagnosis?** **A newly formed ulcer on top of a previous Leukoplakia** **Think → SCC "Squamous cell carcinoma".** That's why Leukoplakia should be biopsied. As it is premalignant. Also remember, half the cases of SCC of the mouth have cervical LN metastasis at the time of diagnosis.
Key 133	**Pilonidal Sinus (PNS):** 

◙ Pilonidal disease is a type of skin infection which typically occurs as a cyst between the cheeks of the buttocks and often at the upper end. It is an inflammatory skin condition usually in the midline of the natal cleft.

◙ Presentations:

√ Asymptomatic (non-tender pits in the natal cleft).

√ Acute abscess (painful tender lump with purulent pus).

√ Chronic cyst.

√ Chronic sinus with persistent discharge.

It is often present as painful swelling with occasional discharge in the sacrococcygeal region. It is aggravated by prolonged sitting positions.

◙ **Risk factors** include obesity, family history, prolonged sitting, greater amounts of hair, and not enough exercise.

◙ **The underlying mechanism** is believed to involve a mechanical process. The lesions may contain hair and skin debris.

◙ **Diagnosis** is based on symptoms and examination.

◙ **Management:**

√ If asymptomatic → Wait and watch.

√ If Abscess → Incision and drainage (same-day).

√ Chronic sinus with persistent discharge → Referral to surgery (general or colorectal surgery unit) for surgical excision (lay open/ closed/ laser).

Key 134	**Red, panful, flatulent and warm swelling near the anus:** **Think → Perianal abscess.** **Treatment? → Incision and drainage (I & D).** • While antibiotics can help in treating the infection, they often cannot penetrate the thick wall of the abscess cavity. So, (I & D) is the most appropriate management of perianal abscess. • Warm sitz baths can provide symptomatic relief but do not treat the root cause.
Key 135	**Obesity Management:** **Based on body mass index (BMI):** • Offer **lifestyle advice on diet and physical activity** if: √ BMI: 25-29.9 kg/m2 (overweight) • **Orlistat** (1ry drug choice) if: √ BMI: ≥ 30 kg/m2 √ or BMI: ≥ 28 kg/m2 with associated risk factors (eg, diabetes, hypertension, dyslipidemia). • Refer to **bariatric surgery** if: √ BMI: ≥ 40 kg/m2 √ or BMI: 35-40 kg/m2 with associated significant comorbidities (eg, diabetes, hypertension)

Key 136	**After abdominal surgery:** ◆ **Mechanical bowel obstruction** can follow surgery especially within **weeks to months** after abdominal surgery due to post-operative adhesions. It is characterised by **high-pitched** (**noisy**, **hyperactive**) bowel sounds. ◆ **Paralytic ileus** can follow surgery especially within **days**, not weeks, after abdominal surgery. It is characterised by **absent bowel sounds**. On percussion → hyperresonance. ◙ In a patient with intestinal obstructions, the emergency team's role is to insert NGT if needed, deliver IV fluids and analgesics and request X-ray and then to → send the patient to the surgical team. At surgical ward, they can decide whether the patient needs surgery or conservative management.
Key 137	**What is the most appropriate investigation for the following post-operative complications after an abdominal surgery?** **[Post-operative abscess, anastomotic leaks, intra-abdominal infections].** → **CT scan of the abdomen and pelvis** **"usually with IV contrast".**
Key 138	**A Scenario on Previous Topics:** A 38-year-old man presents with new-onset jaundice, epigastric pain, and nausea which started 3 days ago. The epigastric pain is colicky and intermittent, often related to meals. He has no history of weight loss. He drinks around 28

units of alcohol weekly for several years. On examination, he appears jaundiced, and has epigastric and right upper quadrant tenderness with no palpable abdominal masses. His blood results are as follows:

- Serum alanine transaminase (ALT): 77 U/L (5-35).
- Serum aspartate aminotransferase (AST): 44 U/L (5-35).
- Serum alkaline phosphatase (ALP): 909 U/L (30-150).
- Gamma glutamyl transferase (γGT): 84 U/L (8-60).
- Bilirubin 90 µmol/L (3-17). > 50% of his bilirubin is conjugated.
- Albumin 37 g/L (35-50).
- Amylase 410 U/L (0-140).
- Observations: within normal limits.

What is the single most likely diagnosis?

A) Alcoholic hepatitis.
B) Primary biliary cirrhosis.
C) Primary sclerosing cholangitis.
D) Choledocholithiasis.
E) Pancreatic cancer.

Answer → D.

Remember: ↓

Obstructive Jaundice =

Acute choledocholithiasis: It results when stones form in the gallbladder and then pass into the common bile duct (CBD), where they may become lodged and cause obstruction.

- Occurs frequently during **pregnancy**.
- Presents with:

√ Right Upper Quadrant Pain (sometimes with epigastric pain) "the pain is often colicky and related to meals" **+**

√ Obstructive features ► Jaundice, **Dark urine,** and **Pale stools**,

(and **↑ ALP** = serum **AL**kaline **P**hosphatase).

- **The most appropriate investigation** → **Ultrasound of the Abdomen** → as it will most likely show the CBD stones" Choledocholithiasis".

- Why is amylase elevated in this stem?

→ The obstruction may have led to acute pancreatitis → ↑ amylase.

- Why is gamma GT elevated in this stem?

→ This could be due to alcohol consumption or cholestasis.

- What is cholestasis?

→ Cholestasis is a decrease in bile flow due to impaired secretion by hepatocytes or due to obstruction of bile flow through intra-or extrahepatic bile ducts.

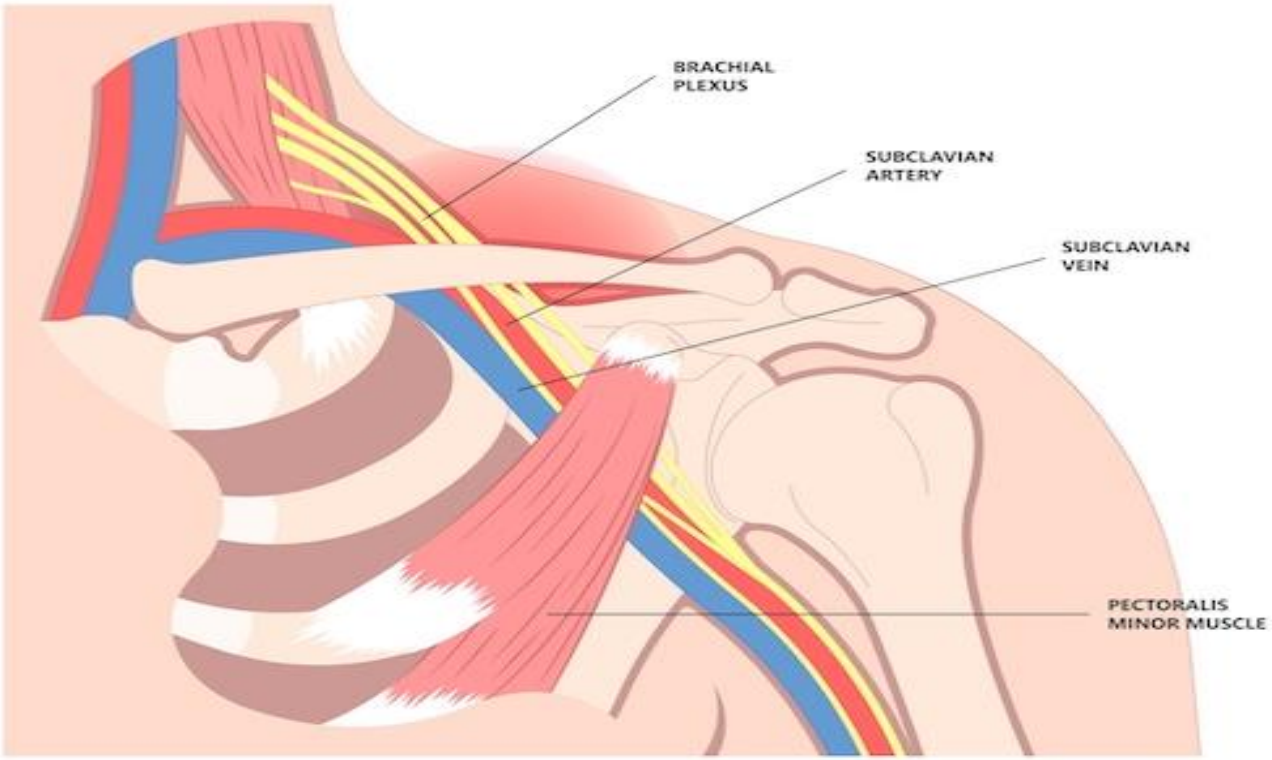
◙ Why not alcoholic hepatitis?
→ In alcoholic hepatitis, AST is usually elevated more than ALT.

◙ Why not pancreatic cancer?
→ The epigastric pain in this stem is colicky and related to meals, which is more typical of conditions involving liver or gallbladder.

	On the other hand, the abdominal pain in pancreatic cancer is more constant "not related to meals", deep-seated, and chronic. ◙ **Why not primary biliary cirrhosis?** → Around 50% of patients with primary biliary cirrhosis are asymptomatic. If symptoms present, they usually start with fatigue and pruritus "itching". Obstructive jaundice may present but it is a "late" sign. ◙ **Why not primary sclerosing cholangitis (PSC)?** → The predominant features of PSC are → jaundice, steatorrhea "fatty stool", pruritus, and weight loss. Here, noting but jaundice is present.
Key 139	**Important Post-operative Complications to Remember:** ◙ Hemicolectomy complicated a few days after surgery by: severe, generalized abdominal pain and tenderness over the site of the anastomosis + fever + reduced bowel sounds + ↑ WBCs. → Think: Anastomotic leak → Perform: CT scan of abdomen and pelvis with contrast. ◙ Abdominal surgery, or prolonged immobilisation (eg, hip surgery) complicated a few days after surgery by: Abdominal distension "bloating", No passage of flatus "gases" + Absent Bowel Sounds + Nausea, Vomiting + Percussion ⟶ Hyperresonance. → Think: Paralytic ileus. → Perform: Erect Abdominal X-ray → (Gases/ air-fluid levels/ dilated small loops). Remember: One of the common causes of paralytic ileus is electrolyte disturbance, including **hypokalemia** and **hypercalcemia**; not hypocalcemia.

Key 140

Thoracic Outlet Syndrome (TOS)



• **Thoracic outlet syndrome (TOS)**: A condition in which there is compression of the nerves, arteries, or veins in the superior thoracic aperture, the passageway from the lower neck to the armpit, also known as the thoracic outlet.

• There are three main types: neurogenic, venous, and arterial.

• The **neurogenic** type (compressing brachial plexus → mixed nerve symptoms) is the most common and presents with pain, weakness, paraesthesia (numbness), and occasionally loss of muscle at the base of the thumb (thenar muscles). It presents gradually, and it is unilateral.

• The **venous** type results in swelling, pain, and possibly a bluish coloration of the arm.

• The **arterial** type results in pain, coldness, and pallor of the arm.

• TOS may result from trauma, repetitive arm movements, tumors, pregnancy, or anatomical variations such as a cervical rib.

• The diagnosis may be supported by nerve conduction studies and medical imaging. TOS is difficult to diagnose and there are many potential differential diagnoses as well as other diseases that are often co-occurrent with TOS.

• Initial treatment for the neurogenic type is with exercises to strengthen the chest muscles and improve posture. NSAIDs such as naproxen may be used for pain. Surgery is typically done for the arterial and venous types and for the neurogenic type if it does not improve with other treatments. Blood thinners may be used to treat or prevent blood clots.

Scenario:

A 44-year-old man present with 3 months history of numbness and tingling In his right hand mostly affecting the little finger and the ulnar side of the ring finger. There is weakness on gripping objects. There is thenar eminence atrophy. There is weakness in the forearm muscles innervated by the ulnar nerve. He describes heaviness sensation in his arm. There is no nick pain or previous neck surgery.

→ **Thoracic outlet obstruction.**

There are some key points to remember for thoracic outlet syndrome:

√ Unilateral.
√ Presents gradually.

	√ weakness and atrophy may be seen in the thenar muscles (innervated by the median nerve) particularly abductor pollicis brevis. √ It can involve the muscles that are innervated by the ulnar nerve "eg, in the forearm". √ Pain and or numbness in the hand or forearm, commonly affecting the ulnar side. √ Sometimes: pulsatile mass below clavicle or in the supraclavicular area. **Also**: depending on which neurovascular structures are involved, it may be seen together with a weak radial pulse, forearm cyanosis (bluish), and or thenar muscle weakness. (may or may not).
Key 141	**Painless rectal bleeding + Palpable rectal mass on digital rectal examination** **Next Step** → Colonoscopy (or if not in the options → Sigmoidoscopy). **√** This is to visualise colon/ sigmoid and take biopsy for histopathology to confirm or exclude colorectal cancer. **√ CT scan** is important for staging, but it is not the next step for rectal masses.
Key 142	**Post-operative prevention "prophylaxis" for major abdominal surgeries:** → **Low molecular weight heparin (LMWH).** • **LMWH (low molecular weight heparin) eg, enoxaparin** >>> recommended for VTE prophylaxis after major abdominal surgeries eg, cholecystectomy, open colectomy when the patient has a risk factor or will be immobilized for a long time postoperatively.

	• **DOACs (direct oral anticoagulants) eg, dabigatran, rivaroxaban, apixaban, edoxaban** >>> recommended for VTE prophylaxis in medical patients or after orthopaedic surgeries eg, hip or knee replacement when the patient has a risk factor or will be immobilized for a long time postoperatively.
Key 143	**Elderly (+) Iron deficiency anemia (+) Positive fecal immunochemical test (FIT)** **Next step** → Colonoscopy. (To rule out colorectal carcinoma). • +ve FIT indicates occult blood in stools, suggesting GI bleeding. • Even if there are no symptoms or weight loss, we need to rule out colorectal cancer in elderly people who have iron deficiency anemia and positive FIT.
Key 144	**An Important Scenario on A Previous Topic** A 65-year-old man presents to the clinic with a five-week history of progressive jaundice. He reports dark urine and pale stools. He has experienced unexplained weight loss of 9 kg over the past two months. He denies any abdominal pain, fever, or changes in bowel habits. On examination, he appears cachectic and has a palpable, non-tender mass in the right upper quadrant of his abdomen. Which of the following is the most likely diagnosis? A. Hepatocellular carcinoma. B. Pancreatic cancer. C. Primary sclerosing cholangitis. D. Chronic pancreatitis. E. Cholangiocarcinoma.

Answer → B. Pancreatic cancer.

The patient's symptoms of progressive jaundice, dark urine, pale stools, and significant weight loss are indicative of an obstruction in the biliary system, most likely caused by a malignancy. The palpable, non-tender mass in the right upper quadrant is a key finding that helps narrow down the diagnosis. Let's evaluate each option:

- **A. Hepatocellular carcinoma:** This type of cancer is typically associated with underlying liver conditions such as cirrhosis or hepatitis. It can cause jaundice, but the presence of a palpable mass would more commonly be in the setting of diffuse liver involvement rather than a solitary mass causing biliary obstruction without significant liver disease history.

- **B. Pancreatic cancer:** Pancreatic cancer, especially when it involves the head of the pancreas, is known to cause obstructive jaundice due to its location near the bile duct. This can lead to symptoms such as dark urine, pale stools, and significant weight loss. A palpable mass in the right upper quadrant further supports this diagnosis, as it may represent the enlarged head of the pancreas or an associated lymph node.

- **C. Primary sclerosing cholangitis:** This condition usually presents with chronic liver disease symptoms and is commonly associated with inflammatory bowel disease. It does not typically present with a palpable mass or such rapid weight loss in the absence of advanced disease complications.

- **D. Chronic pancreatitis:** Chronic pancreatitis often presents with recurrent abdominal pain, and while it can cause jaundice, it is not usually associated with a palpable mass in the absence of a pseudocyst or significant fibrosis. The lack of pain in this patient makes this diagnosis less likely.

	• **E. Cholangiocarcinoma:** This is a cancer of the bile ducts and can cause symptoms similar to pancreatic cancer. However, it is less likely to present with a palpable mass unless it is very advanced or has caused significant enlargement of nearby structures. Given the clinical presentation of jaundice, dark urine, pale stools, significant weight loss, and a palpable right upper quadrant mass, the most likely diagnosis is **B. Pancreatic cancer**. The involvement of the head of the pancreas can lead to bile duct obstruction, causing the described symptoms. The absence of pain is also consistent with pancreatic cancer, which can often present insidiously until it causes significant biliary obstruction.
Key 145	**An Important Scenario on Hemorrhoids Management** A 69-year-old woman attends the clinic for an assessment of intermittent, mild lower abdominal discomfort. During the physical examination, which includes an abdominal and rectal examination to investigate the discomfort, the clinician discovers third-degree hemorrhoids. The patient mentions these hemorrhoids have been present for years but cause no pain, bleeding, or other symptoms. She denies any recent changes in bowel habits, weight loss, or other systemic symptoms. What is the most appropriate management of her hemorrhoids? A. Surgical excision. B. No treatment is necessary. C. Hydrocortisone cream. D. Oral corticosteroids. E. Rubber band ligation.

Answer → **B. (No treatment is necessary)**.

The patient's presentation of intermittent, mild lower abdominal discomfort led to the incidental finding of third-degree hemorrhoids during the examination. The hemorrhoids have been present for years without causing pain, bleeding, or other symptoms, and the patient denies any significant changes in her health.

Third-degree hemorrhoids are those that prolapse with straining and require manual reduction. The appropriate management focuses on addressing any potential for future symptoms while avoiding unnecessary treatment.

Management Options:

- **A. Surgical excision:** This is a treatment option for severe hemorrhoids that are symptomatic and have not responded to less invasive treatments. Given the patient's lack of symptoms, surgical excision would be unnecessary and too aggressive.

- **B. No treatment is necessary:** Since the hemorrhoids are **asymptomatic** and the patient has no complaints related to them, conservative management is appropriate. This option focuses on observation and lifestyle modifications to prevent future issues, such as increasing fiber intake and ensuring proper hydration.

- **C. Hydrocortisone cream:** This treatment is typically used to reduce inflammation and discomfort in symptomatic hemorrhoids. Since the patient is not experiencing symptoms, hydrocortisone cream is not necessary.

	• **D. Oral corticosteroids:** These are not used for the treatment of hemorrhoids. They are more appropriate for inflammatory conditions and are not indicated here. • **E. Rubber band ligation:** This minimally invasive procedure is used for symptomatic hemorrhoids, particularly those that prolapse. It involves placing a rubber band around the base of the hemorrhoid to cut off its blood supply, causing it to fall off. While effective, it is typically reserved for symptomatic hemorrhoids. **Most appropriate management: B. No treatment is necessary** is the most appropriate choice in this scenario. The patient's third-degree hemorrhoids are not causing any discomfort or other symptoms, so invasive treatments or medications are not required. Instead, advising the patient on lifestyle modifications, such as increasing fiber intake and proper hydration, can help prevent any future symptoms. Regular follow-up can ensure that any potential future issues are promptly addressed. **Remember:** No matter how terrible the hemorrhoids look, they need no treatment until symptomatic.
Key 146	**Educative Scenario** A 58-year-old man presents to the clinic with a painful, swollen area on his left calf. He explains that the swelling gradually developed over the past three days and is tender when touched. He denies any recent trauma to the area. He has

noticed slight redness over the swelling but reports no significant change in skin temperature. On examination, there is a palpable cord-like structure under the skin of the affected area with overlying erythema. The patient has a history of hypertension and is currently on lisinopril. What is the most likely diagnosis?

Options:

A) Cellulitis.

B) Deep vein thrombosis.

C) Medication side effects.

D) Lipoma.

E) Superficial thrombophlebitis.

Answer:

Correct answer → E) Superficial thrombophlebitis.

This patient presents with a painful, swollen, and tender area with a palpable cord-like structure and erythema, which is characteristic of superficial thrombophlebitis. The gradual onset, absence of trauma, and lack of significant skin temperature change further support this diagnosis. Superficial

thrombophlebitis typically affects superficial veins, causing redness and tenderness along the course of the vein.

Explanation of other options:

A) **Cellulitis.**

Cellulitis typically causes more diffuse redness, warmth, and swelling, often accompanied by systemic symptoms such as fever. The localised, cord-like structure in this case is not consistent with cellulitis.

B) **Deep vein thrombosis.**

Deep vein thrombosis (DVT) would generally cause swelling of the entire limb rather than a localized area and is less likely to present with a palpable cord-like structure.

C) **Medication side effects.**

While medications like lisinopril may cause swelling, drug-induced oedema is more likely to be bilateral and occur in lower areas such as the ankles. The cord-like structure seen here is not a typical feature of medication side effects.

D) **Lipoma.**

Lipomas are typically soft, non-tender, and painless, unlike the painful, tender swelling described in this case.

Summary: Superficial Thrombophlebitis

• Superficial thrombophlebitis occurs when a superficial vein becomes inflamed, leading to pain, tenderness, swelling, and redness along the course of the vein.

• It often presents with a palpable, cord-like structure under the skin and is most commonly seen in the legs. This condition is typically localised and occurs gradually over a few days. While other conditions such as cellulitis, DVT, and medication-induced oedema can cause swelling, the clinical features of this case align most closely with superficial thrombophlebitis.

Key 147

Educative Scenario

A 74-year-old man with advanced gastric carcinoma is admitted for an elective partial gastrectomy. He has been experiencing severe nausea and early satiety for the past three weeks, leading to significant weight loss and an inability to consume adequate meals. Despite attempts at oral intake with antiemetic treatment, he is unable to meet his nutritional requirements. On examination, he is visibly cachectic, with signs of muscle wasting, and his abdomen is soft and non-tender. What is the most appropriate method of providing nutrition preoperatively in this patient?

Options:

A) Jejunostomy tube.

B) Nasogastric tube.

C) Intramuscular vitamin injections.

D) Percutaneous endoscopic gastrostomy (PEG).

E) Total parenteral nutrition (TPN).

Answer:

Correct answer → E) Total parenteral nutrition (TPN).

In this case, total parenteral nutrition (TPN) is the most appropriate method for providing nutritional support preoperatively. TPN delivers complete nutrition intravenously, bypassing the gastrointestinal tract. This is crucial for a patient with advanced gastric carcinoma, as their stomach is likely compromised by the tumour, making enteral feeding (through the digestive tract) ineffective. TPN ensures that the patient's nutritional needs are met in preparation for surgery, especially given the severity of his malnutrition.

Explanation of other options:

A) **Jejunostomy tube.**

A jejunostomy tube is invasive and is typically placed during surgery rather than before it. It relies on the gastrointestinal tract's ability to absorb nutrients, which may be impaired in patients with advanced gastric cancer. It is better suited for long-term postoperative feeding in patients who cannot use their stomach, rather than preoperative nutritional support.

B) **Nasogastric tube.**

In this patient, the tumour likely obstructs the stomach or upper gastrointestinal tract, making nasogastric feeding inefficient. The NG tube may not deliver adequate nutrition due to the compromised stomach function caused by the advanced cancer.

C) **Intramuscular vitamin injections.**

While intramuscular vitamin injections can provide essential vitamins, they do not provide comprehensive nutrition. They are insufficient for addressing the patient's caloric, protein, and overall nutrient needs in this preoperative setting.

D) **Percutaneous endoscopic gastrostomy (PEG).**

A PEG tube is inappropriate for this patient as it provides direct access to the

stomach, which is likely obstructed or severely compromised by the tumour. This makes PEG feeding ineffective for ensuring adequate nutrition.

Summary: Preoperative Nutrition in Advanced Gastric Carcinoma

For patients with advanced oesophageal, gastric, or pancreatic cancer who are unable to meet their nutritional needs due to nausea, early satiety, or gastrointestinal obstruction, **Total Parenteral Nutrition (TPN)** is the preferred method of nutritional support before surgery. TPN bypasses the gastrointestinal tract entirely, providing essential nutrients intravenously, which is vital when the stomach is compromised. Other options like jejunostomy tubes, nasogastric tubes, and PEG are not appropriate due to the impairment of the digestive system caused by the tumour, while intramuscular injections alone are inadequate for full nutritional support.